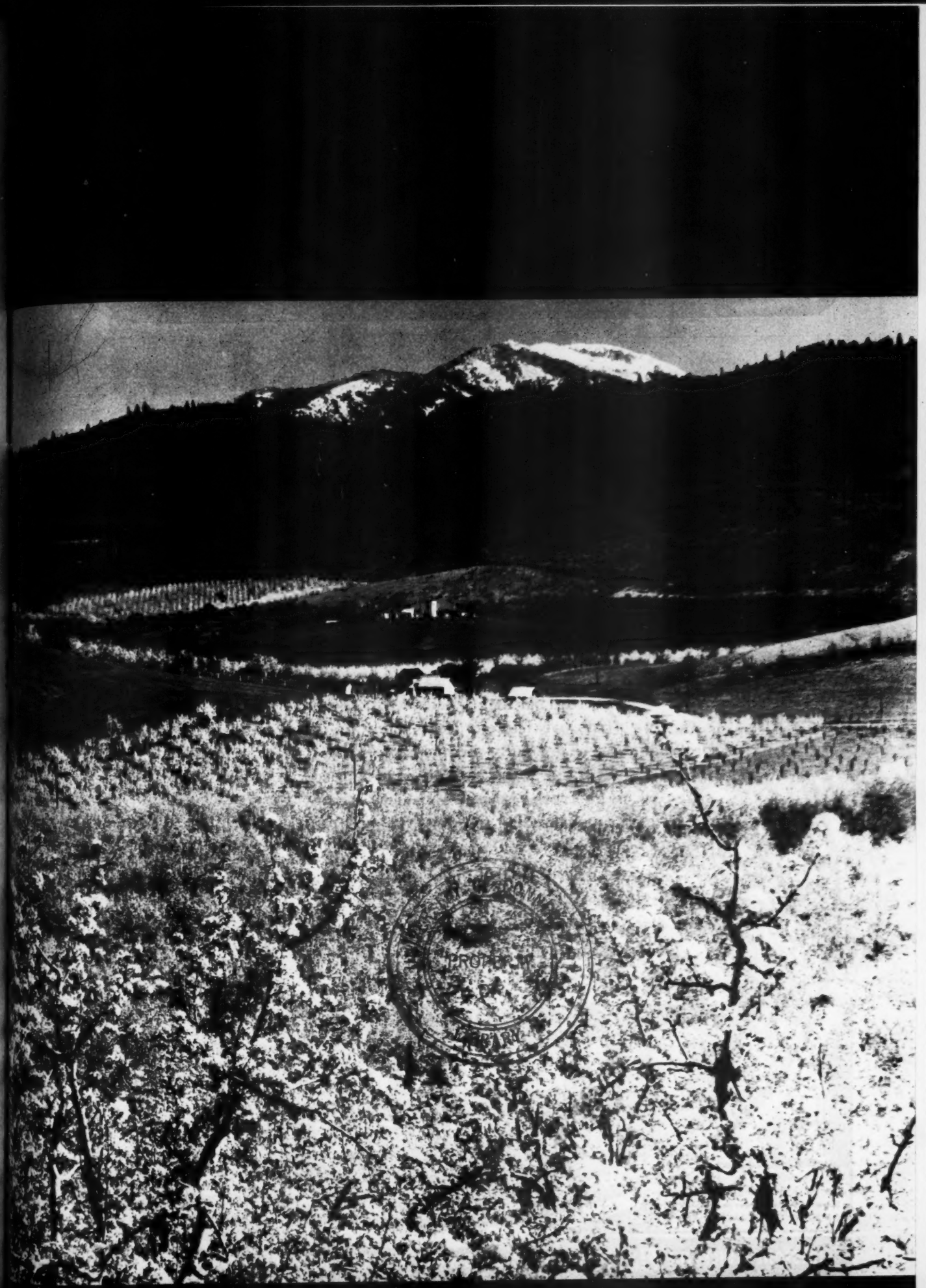

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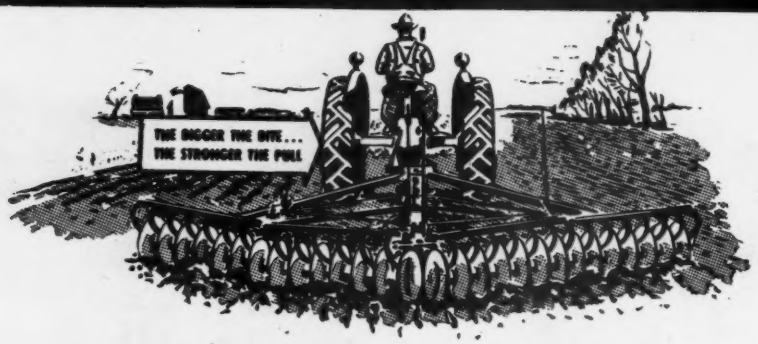

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When the young farmers return with their Victory they must take over and carry on. Food must write the Peace and make it last. Harvester and the INTERNATIONAL dealers, and the modern FARMALL SYSTEM, will arm them for the needs of post-war Agriculture.

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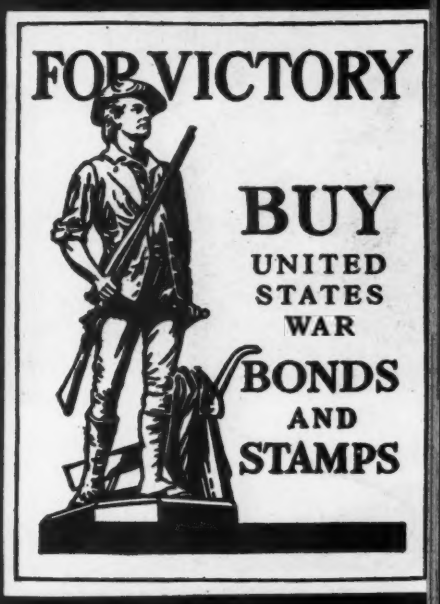
AMERICAN FRUIT GROWER

E. G. K. MEISTER, *Publisher*



FORESIGHT IS ONLY SOLUTION OF LABOR SHORTAGE

WHILE there are many plans in the making for solving the farm labor problems, there is no assurance that any one, or even all of these plans, will actually save the situation when harvest time comes.

With no sure-cure in sight for 1944, it looks very much as though each fruit grower will have to solve his own labor problems this summer. This means starting now and using all possible foresight and personal planning.

Fruit growers managed to get through the 1943 season with a work force which had been drastically reduced, in most instances, below its pre-war size. But 1943 was a short crop year.

This year promises biennial bumper fruit crops. And this is in the face of the fact that since April, 1940, about four million actual or potential workers have left all types of farms for the armed forces, or for non-farm employment. Furthermore, deferment requirements for farm workers are being tightened.

It behooves each fruit grower to do his planning now for summer labor and, especially, for pickers at harvest time. It is pretty largely his own problem, to solve in whatever way he can.

To compensate for the loss of experienced, able-bodied manpower, the fruit grower has, or will have to, increase his own working hours. He will have to bring his wife and children more fully into his working force. He will have to replace a son or young hired hand with an elderly man. And whether he is sold on the idea or not, he will, in many instances, be obliged to train and use inexperienced town and city youths, men and women, enlisted in the U. S. Crop Corps, to help him through seasonal-labor peaks, such as picking. In some parts of the country this year, fruit growers may have to resort to the use of prisoners of war, troops and other special sources of labor.

There will be no simple solution of the labor shortage for any grower this season. Foresight is the only possible answer to a problem which probably will grow worse, month by month. And foresight means starting right now to investigate every possible source of full or part-time labor.

Remember, there is a big fruit crop coming!

●

NATIONWIDE NEWS

DURING the past year 9,873,450 pounds of fruit products were shipped through the American Red Cross to American and United Nations prisoners of war. These fruit products were included in the 7,405,099 prisoner-of-war food parcels, packed by Red Cross volunteers, which were delivered through the International Red Cross Committee to prisoner-of-war camps in Axis nations and in the Far East.

Included in the standard food parcels were 15 ounces of dried fruit and a 4 oz. can of orange concentrate. In parcels shipped to the Far East jam replaced the can of orange concentrate. The contents of each standard prisoner-of-war food parcel weigh approximately eight pounds, and contain other foods besides the fruit products.

The outlook for 1944 is that the quantity of prisoner-of-war food parcels shipped under Red Cross auspices, will be even larger in 1944.

★

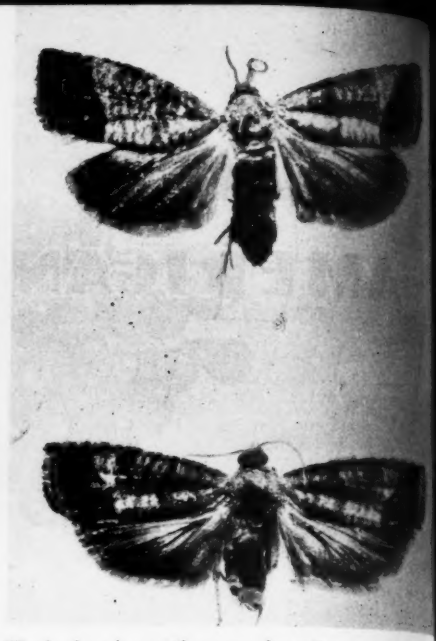
IN a recent report of the "Food Program for 1944, issued by the War Food Administration, it is estimated that the total requirement of canned fruits for military, lend-lease and U. S. civilian use in 1944 will be 7 per cent greater than it was in 1943.

★

COLD storage stocks of apples which totaled 10,535,000 bushels on March 1, 1944, were 6 million bush-

(Continued on page 31)

"Sheets spread under the apple tree caught most of the moths knocked down by the nicotine spray in experimental tests. More than 90 per cent of moths knocked down failed to recover."



"Each female moth may deposit an average of 50 eggs or more during period of activity of the spring brood."

CODLING MOTH CONTROL

USE OF NICOTINE TO DESTROY THE MOTH STAGE

By W. S. HOUGH

Winchester Research Laboratory of the Virginia Experiment Station

POISONING codling moth larvae with lead arsenate has been the chief means of controlling this well-known apple pest for many years. Up to 1922 lead arsenate was generally used at the rate of two pounds of the dry material in 100 gallons of water, but in 1924 the recommended dosage had increased to three pounds per 100 gallons in order to increase efficiency of the spray in eliminating stings and destroying larvae. A few years later it was learned that oil (first fish oil then petroleum oil) could be used safely in summer sprays to increase adherence of lead arsenate and, thus, increase the killing power of the sprays.

Various experimenters found that oil used in sufficient quantity would kill codling moth eggs and thus could be made to serve as an egg-killing agent as well as a sticker. The ovicidal action of oil added much to the efficiency of lead arsenate sprays, since two stages (egg and larva) were affected by the combination. While the "double-barrelled blow" against the enemy was decidedly effective, growers quickly learned that oil used in too many sprays tended to delay coloring and, what was more important, greatly increased the difficulties of removal of lead arsenate residue at picking time. Consequently, oil as an ovicide against codling moth eggs could be used only in a limited number of sprays in order to avoid complications.

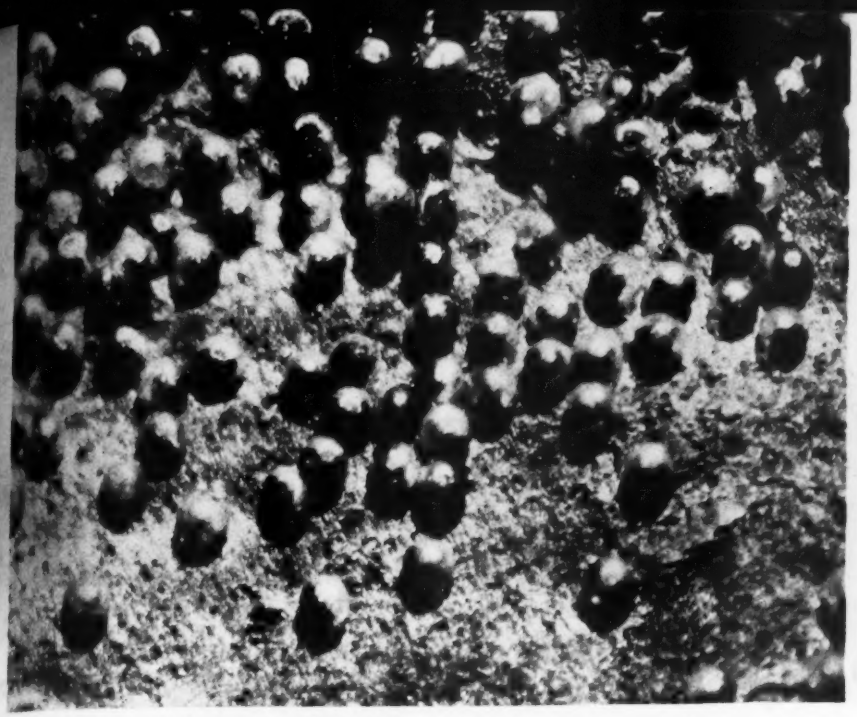
In May, 1934 we learned that adult codling moths in a very heavily infested orchard were being killed by the nicotine which we were using with lead arsenate in the first cover spray. Subsequent tests on an apple tree next to a packing shed from which large numbers of moths were emerging showed that more than 90 per cent of the moths knocked out of the tree and collected on sheets spread under the branches did not recover.

During the next several seasons tests were made to determine the dosage of nicotine (usually as nicotine sulphate) required to destroy the moths. In these tests a known number of moths was released in the apple trees a short time before spraying and sheets were spread under each tree to collect the moths knocked down. A summary of the more important results is shown in Table 1. It will be seen that nicotine sulphate at one pint per 100 gallons gave a slightly higher percentage of kill than a dosage of lesser amount, although in some tests with nicotine sulphate at three quarters of a pint per 100 gallons the kill was equal to that obtained with one pint per 100 gallons. The addition of lime or oil did not seem to consistently alter the results. Temperatures ranging from 65 degrees to 96 degrees did not appear to influence the effectiveness of the nicotine in destroying the moths. Tests made in cloudy and clear weather were equally effective but the moth-kill was usually reduced considerably when the trees were sprayed in windy weather. Important points necessary to observe for most efficient results were: (1) free nicotine or

Table 1.—Results of tests with various nicotine sprays to destroy adult codling moths which were released in apple trees.

Amount per 100 gallons	*Percent Killed*	
	Average	*Highest*
Black leaf-40 1/2 pint	66	77
Black leaf-40 3/4 pint	68	85
Black leaf-40 1 pint	77	94
Black leaf-50 1 pint	79	98
Black leaf-40 1 pt., lime 1 lb.	76	94
Black leaf-40 1 pt., lime 2 lbs.	73	90
Black leaf-40 1 pt., lime 3 lbs.	70	87
Black leaf-40 1 pt., oil 1 gal.	71	91
Black leaf-40 1 pt., oil 1 gal., and lime 1 lb.	79	97

(Continued on page 26)



Above photo shows highly enlarged red mite eggs on apple bark.

Here are red mite eggs enlarged on an apple twig.

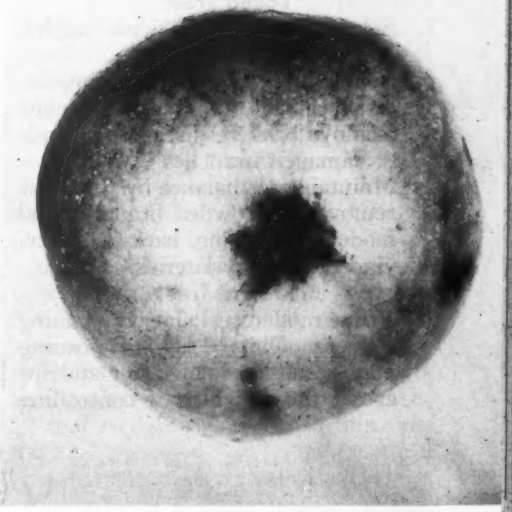
CONTROL OF RED MITE

By C. R. CUTRIGHT
Ohio Agricultural Experiment Station

DURING the period from 1935 to 1939 many growers abandoned the use of lime-sulphur as a fungicide for summer sprays and in its place adopted some of the milder sulfurs such as flotation-sulfur-paste or one of the numerous commercial brands of wettable sulfur. This same interval was also marked by notable increases in the amounts of injury inflicted by the European red mite on commercial apple orchards, particularly in northern Ohio. Since it is known that the introduction of any new or modified spray material into a spray program may give rise to entirely unexpected results, many growers and entomologists raised the question as to whether or not the use of a milder sulfur had favored the red mite.

Before seeking the answer to this question, let us recall that the European red mite is not an insect; it is closely related to the ticks and spiders. The mite overwinters as a small, red, globular egg on the bark of the tree and in some seasons, unfortunately, these are so abundant that small areas may have a decided reddish cast. In northern Ohio most of the eggs hatch during the last 10 days of April and from that time on there is a steady succession of mites and eggs, a total of from five to eight generations during the season. So prolific is this mite that the progeny of a single spring female could amount to ten million individuals by late September. During the growing season the mites are found on the under side of the leaves where they appear as tiny red-brown or greenish spots. Mite eggs are also found in the same location. The mites feed by rasping or scraping the under surface of the leaf, thus destroying the chlorophyl, and causing the characteristic bronzing of the foliage. This type of injury greatly reduces the efficiency of the foliage and, if the majority of the leaves are injured, smaller fruits of lower quality result.

Keeping these facts in mind, let us return to the question of lime-sulfur versus mild sulfurs in mite control. In 1938 entomologists of the Ohio Station conducted both laboratory and field experiments in which single applications of liquid lime-sulfur, dry lime - sulfur, flotation - sulfur - paste, and sulfur dust were used on mite-infested foliage. The results from these experiments showed that liquid and dry lime-sulfur were slightly more efficient in destroying mites than was the flotation sulfur. Sulfur dust was a poor fourth. However, none of the materials, even when used at high temperatures, gave kills of more than 55 per cent, which is practically no control at all, especially when used against a pest with the reproductive powers of the red mite. These experiments, while quite conclusive in their field, did not show what the effect on the red mite would be if full-season schedules of each of these same materials were used.



Red mite eggs in calyx of apple at harvest time.

In 1939 a full-season schedule of liquid lime-sulfur—two pre-blossom, the calyx, and three cover sprays—was compared with a similar schedule of flotation - sulphur - paste. Other schedules were also tested, but as we were primarily interested in the comparison of liquid lime-sulfur with the flotation type, these others will not be discussed at this time. The records were made by taking counts of the mite population every two weeks throughout the season. These counts started in early June and ended in late September. They were made by

(Continued on page 20)

Mature peach tree pruned to the open center system with three main scaffold branches.

Shown above is a one year old peach tree pruned to the modified leader system which is very commonly and widely used for apples.

TIPS ON PRUNING

By WESLEY P. JUDKINS and T. E. FOWLER

Ohio Agriculture Experiment Station

Do you perform the following operations when pruning your fruit trees?

Young Trees

1. Select well spaced, wide angled scaffold branches.
2. Prune lightly. Heavy pruning delays bearings and reduces yields.
3. Remove broken, diseased, or badly damaged branches.
4. Maintain tree balance by judicious removal of crowded branches and moderate heading back of overvigorous, rangy laterals.

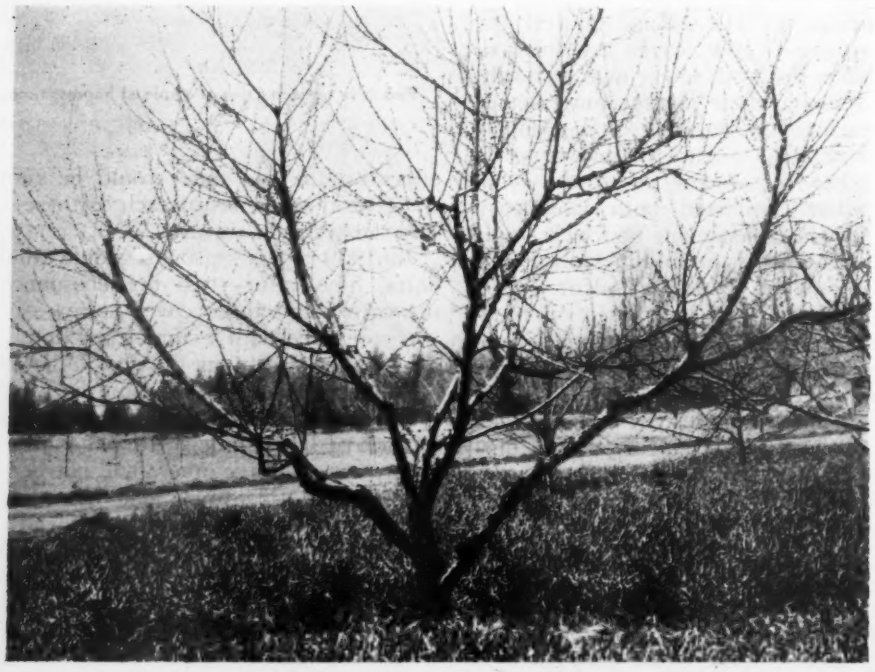
Mature Trees

1. Prune moderately. Heavy pruning reduces yields. Lack of pruning may result in small fruit and increase the difficulty of controlling insects and diseases.
2. Head back moderately to strong laterals to keep trees within a reasonable height. Maintain apple trees within about 20 feet. Head peach trees by cutting to a strong lateral 8 to 9 feet above the ground.
3. Remove broken, diseased and badly damaged branches.
4. Remove crowded or crossing branches and twigs.
5. Remove water sprouts and weak growing "thin-wood" from lower parts and inside of tree. Water sprouts may be removed economically by hand pulling while young

(Continued on page 37)

PHOTOS BY H. BINAU

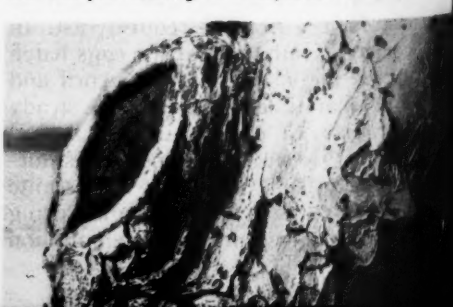
One year old peach tree pruned to the open center system with three scaffold branches. The small center twig should be removed.



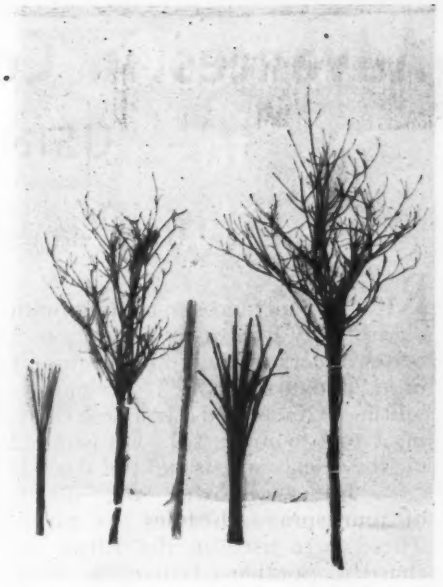
Mature peach tree pruned to the modified leader system.

Pruning wound on apple branch. Original cut was close to the branch and is healing rapidly.

Pruning wound on apple branch. A short stub was left when the branch was removed and has delayed healing as compared to above.



This is a crew of blossom thinners with dogwood brooms in Georgia peach orchard. Each worker will thin 150 to 200 trees per day.



Left to right: Wire thinning brush, medium-sized dogwood broom, peach-twig brush, and larger dogwood broom.

SAVING LABOR IN PEACH THINNING

By J. H. WEINBERGER

Pomologist, U.S.D.A.

PEACH thinning involving the hand removal of blossoms or fruits is a time-consuming and expensive operation. Yet, there are few orchard practices that pay greater dividends. With a heavy bud set on peach trees now and labor scarce, thinning the peach crop this year may well be a serious problem.

For a number of years large peach growers in the Fort Valley section of Georgia have recognized the value of thinning in the bloom those varieties that ripen earlier than Elberta. About five years ago Mr. John David Duke, a large grower of Fort Valley, conceived the idea of brushing peach blossoms off the trees instead of stripping them off by hand. He tried as a brush the ordinary dooryard "brush broom" of the South, made of three or four dogwood saplings tied together. The broom was so successful that he has continued to use it since to thin peaches in the bloom, and a number of other growers also have adopted the practice. This has proved to be one of the cheapest and most time-saving methods of thinning peaches. It gives promise of being useful in sections where frost damage to peach blossoms is relatively rare, as is the case at Fort Valley. Where there is material danger of frost damage after thinning of the blossoms, this method would involve risk of serious reduction of the crop.

On left is a peach tree in almost full bloom. On the right is the same tree after exactly four minutes of brush thinning.

The time required to brush-thin a peach tree is negligible. Last year, for example, a crew of 12 workers, mostly negro women and girls, brush-thinned approximately 2400 bearing trees in one day. A light "touching up" a few days later of limbs missed in the first thinning, and the job was completed at a cost of about a cent a tree. This year an exceptional man was observed who thinned 140 medium-sized trees in three hours. Under average conditions of bud set, with trees 8 to 10 feet high and 16 to 18 feet across, three or four minutes is all that is required to brush-thin one tree.

When first seen, brush thinning appears to be a crude method. Leaf buds are injured to some extent, and blossoms usually are not as well spaced as in hand thinning. But it does accomplish its purpose of removing excess blossoms from the tree. And it does this in only a fraction of the time that hand thinning requires. The loss of leaf buds is not serious at Fort Valley, and the removal of the excess blossoms actually stimulates leaf growth. This stimulating effect on leaf growth has often been observed when nature thins blossoms through frosts. In more northern peach regions, however, leaf buds are usually further developed at full bloom, hence would probably be more easily injured by a brush. In the Fort Valley area, where acreages are large and labor is none too plentiful, brush thinning has been a cheap, quick and effective means to an end. It is not a

(Continued on page 34)

Advances in Codling Moth Control and Costs

USING THE NEW SCHEDULES

By G. EDW. MARSHALL

RECENT advances in codling moth control may lead many growers to a better understanding of the high cost of insect damage as well as the possibilities of increased earnings resulting from good control. On page 12 in the February issue of AMERICAN FRUIT GROWER the details of four spray schedules are given. These were used in the Elrod orchard in Southern Indiana in 1943. Each different program controlled the codling moth effectively.

The table below gives the costs of growing apples, using the four spray schedules. The figures are based on actual production records from blocks of 50 mature trees, producing an average of 15 bushels per tree with an average price of $3.50 per bushel for U.S. No. 1's, $2.00 for those with one or more stings, and $1.00 for wormy fruit. Labor costs amounted to 35 cents per hour and spray materials were charged at prices quoted for lots such as would be used for a 200-tree orchard.

Such figures have never been computed for this orchard before. To most readers they do not arrange themselves as might be expected after a survey of the schedules applied. One feature in this table which makes it worth some study is the fact that the inter-relationship between cost of materials and application on the one hand, and codling moth attack cost on the other, has been expressed in the final figures in the columns headed as *NET*. The *NET* figure represents the earnings after the cost of materials and applications have been arrayed separately, and the reduction in price caused by the codling moth attack, likewise arrayed, has been deducted from the value of the worm free crop. These figures reveal that treatments 2 and 2A were the most expensive. This is because stings were so heavy in these two plots. Costs of plot three were about twice as much in labor as any other treatment and almost twice as much for spray materials, yet this treatment controlled so well that little had to be charged off as codling moth damage.

If such a table is to be an aide in the selection of a spray schedule, it should be remembered that these records were made during an "on" year. If production had averaged less, the *NET* would have been less, because materials and labor would have remained the same, and the codling moth attack would have been the same, although concentrated on fewer apples. The resulting crops would have carried more stings and worms. Likewise, had the crop been larger the earnings would have been greater.

Four years ago U. S. No. 1 apples sold for 85 cents per bushel. If such conditions had prevailed this year, or are repeated in the future, the value of the crop from each plot would have been $637.50. While studying cost figures in column eight and recalling that to this we must add costs for pruning, disease control, picking, packing, fertilizer, cultivation, and bending, we realize that no grower could operate under such conditions.

DUE to space restrictions in conformity with the Government's rationing of white paper, the Table appearing at the bottom of this page did not appear in the February issue of AMERICAN FRUIT GROWER as a part of G. Edw. Marshall's article on "Advances In Codling Moth Control."

The Table is published herewith together with a further explanation of it by the author.—Editors.

Schedule Used	No. Sprays	Plot No.	Cost of Materials $	Cost of Labor $	Coddling Moth Attack Per 100 Apples		Cost of Codling Moth Damage $	Cost of Codling Moth Damage Materials & Labor $	Value of Crop Without Codling Moth Damage $	Net Value $	Net Per Bushel $
					Stings	Worms					
Tank Mix Nicotine bentonite	7	1	111.69	48.61	20.66	14.19	418.72	579.02	2,625.00	2,045.98	2.72
Lead arsenate with Zinc sulphate and lime	7	2	57.53	48.61	85.72	7.73	590.36	696.50	2,625.00	1,928.50	2.57
Lead arsenate with Zinc sulphate and no lime	7	2A	57.26	48.61	80.60	15.03	595.13	701.00	2,625.00	1,924.00	2.57
Black Leaf 155 at 7-day schedule	13	3	185.76	90.43	24.46	5.86	286.27	562.46	2,625.00	2,062.54	2.75
Lead-oil-soap 3 appl. Floc. Bentonite 3f and a top-off with an ovicide—late	6 plus a top-off	4	59.52	46.32	44.81	17.26	351.00	456.84	2,625.00	2,168.16	2.89

Diseases of Strawberries

By A. G. PLAKIDAS

Louisiana Experiment Station

Photo above shows contrast between two plants, one of which was sprayed for leaf spot.

STRAWBERRY is by far the most widely grown fruit in America. It is grown, commercially or in home gardens, all the way from Alaska to Florida. It is natural that a crop growing under so diverse climatic conditions will be subject to many diseases and insect pests, and the strawberry certainly has more than its just share of these troubles. It is attacked by a large number of diseases, some of which, under favorable conditions, are very destructive. It is not possible in this brief article to take up all the diseases affecting the strawberry. Only the most important ones are discussed briefly. Methods of control are indicated whenever effective control measures are known.

Leaf Blights

Under this heading are included diseases which cause spotting and, often, killing of the foliage. All the leaf blights are caused by fungi (molds). There are a large number of these, but only three, namely, the Leaf Spot, the Leaf Scorch, and the Leaf Blight, are of major economic importance.

The leaf spot is easily recognized by the more-or-less circular spots with purplish margins and grayish-white centers. If the spots are numerous, the leaf is killed.

The leaf scorch is characterized by irregular purple spots without the grayish-white centers. Leaves affected with the scorch eventually dry up ("scorch").

The spots of the leaf blight are large, brown, and usually angular in shape.

The development of leaf diseases is influenced by many factors but mainly by environmental conditions and by the degree of resistance or susceptability of the varieties grown. Some varieties are extremely resistant to one or more of the leaf blights, while others are very susceptible. Moisture is essential for the fungus to initiate infection. For this reason, leaf diseases are apt to be more serious in regions (the South, for example) where high humidity prevails during the growing season.

Fortunately all the leaf blights can be easily controlled by spraying with Bordeaux mixture (4 lbs. of bluestone, 4 lbs. of lime, 50 gallons of water). This spray is perfectly safe to use even when the blossoms are open.

Whether or not it will pay to spray will depend on the severity of the disease and on the varieties grown in a particular region. A few spots on the leaves do not cause enough damage to justify spraying. On the other hand, where the blights occur regularly in severe form, it certainly pays to spray. In Louisiana, for example, the Klondike, which is the leading commercial variety, can not be grown profitably unless sprayed, and our tests have shown that spraying more than doubles the yields of this variety. On the other hand, even under Louisiana conditions, it is not necessary to spray our second commercial variety, the Klonmore, which is extremely resistant to the leaf blights.

Virus Diseases

The virus diseases of strawberries belong to the same class of diseases as leaf roll and mosaic of potatoes, with which most growers are familiar. There are at least five virus diseases that affect the strawberry, of which two, "yellows" (Xanthosis) and "crinkle" are of major economic importance. The chief symptoms of these diseases are yellowing and distortion of the leaves and severe stunting of the entire plant. The yields of diseased plants are markedly reduced. Virus diseases spread from diseased to healthy plants by means of insects, particularly by plant lice. Once a plant becomes diseased, it never recovers, and all its runner plants will be diseased. Up to the present, virus diseases are of major economic importance only in the Pacific Coast States.

The plant photographed here shows the results of "dwarf" or "crimp" disease, which is one of the most serious nematode diseases.

Until desirable varieties resistant to virus diseases have been developed, the most promising method of control is the use of certified plants grown under State supervision, and the roguing of diseased plants in new fields the first summer of planting.

Root Diseases

Rotting of the roots of strawberries, which often results in the death of the plants, is a very serious trouble particularly in the northern states. The plants may look very healthy and beautiful the first summer of planting, but beginning usually the second summer, they begin to look unthrifty and to die gradually. Examination of such plants reveals that all the fine rootlets have rotted, and what is left of the larger roots are unhealthy, dark brown to black in color, from which the trouble gets its popular name of "black root."

There is no complete agreement among plant pathologists and horticulturists as to the cause of root rot. It is true that several fungi have been

(Continued on page 22)

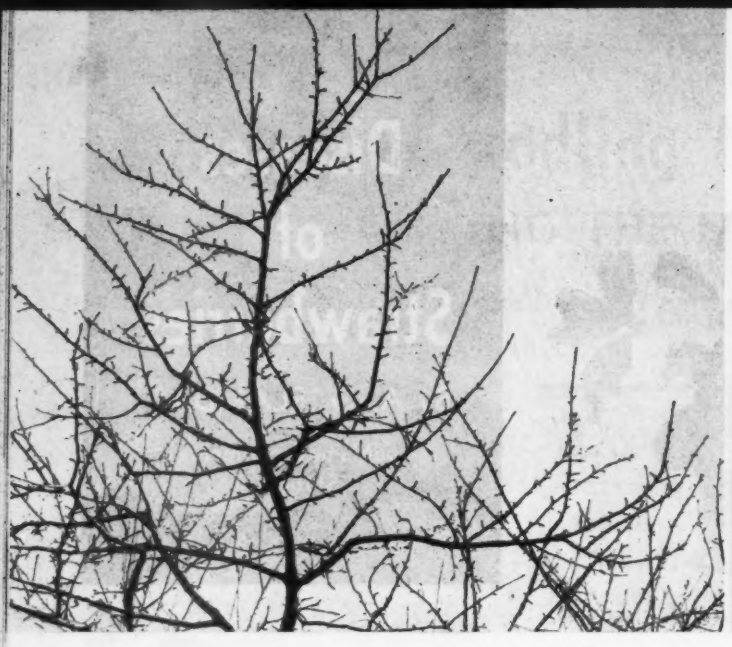


Fig. 1. Top of Stayman tree showing effect of moisture and nutrient deficiencies.

Fig. 2. Top of Stayman tree that has had enough moisture and nutrients.

CULTURAL MANAGEMENT OF STAYMAN APPLES UPON SOILS DEFICIENT IN MOISTURE

By M. A. BLAKE

THE crop of Stayman apples was relatively heavy in many orchards in New Jersey in 1942, followed by a light crop in 1943. In general, these orchards now have a good to heavy set of fruit buds and promise to produce a heavy crop in 1944.

The Stayman apple in New Jersey is very sensitive to high summer temperatures and the moisture and aeration conditions of the soil.

Upon the more open sandy soils and even upon shallow Penn loam soils, the Stayman apple often experiences some deficiency of moisture during a season unless it receives special soil management including tillage and mulching, or both.

One can judge the relative deficiency of moisture which Stayman trees in any orchard have experienced in the past by the form of the trees. The more flat-topped they are, the greater the deficiency. If the trees are small as well as flat-topped, it is likely that both moisture and nutrients have been deficient. If a Stayman tree has an upright leader or several branches extending above the level of the majority, it is an especially good indicator of the moisture and nutrient conditions prevailing in the soil under the tree. If the annual growth upon the higher branches is shorter and the spurs weaker than upon the lower branches, as illustrated in Fig. 1, the trees are either shallow-rooted or the deeper roots are unable to obtain enough moisture. There should be at least from five to six inches of thick annual growth at the tips of the topmost branches. In the summer trees experiencing drought annually will have too few leaves, and they will be too small, as shown in Fig. 3.

The first and most important factor to consider in such orchards is moisture. You cannot conserve too much in a crop year, or in any year.

There are two ways to conserve all of the possible moisture in such orchards in 1944: (a) by tillage; (b) and by mulch or a combination of the two.

(Continued on page 28)

Fig. 3. Stayman tree which is experiencing moisture and nutrient deficiencies.

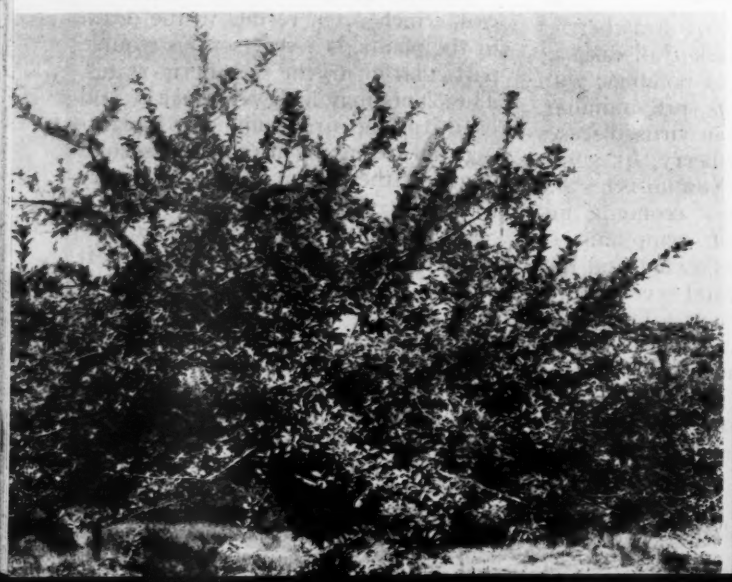


Fig. 4. Stayman tree that has received adequate moisture and nutrients.

STATE NEWS

PENNSYLVANIA—Mr. J. Eric Linde, Manager, Trexler Farms, Orefield, is newly elected President of the Pennsylvania State Horticultural Association for 1944-45.

J. ERIC LINDE

At the recent meeting of the Society the program was so arranged so as to deal principally with major labor, material and supply problems. Dr. J. E. McCord, State College, reported on the accomplishments of the agricultural Extension Service in connection with recruiting labor and harvesting the 1943 crop without a pound of loss.

Dr. J. R. Magness, Division of Fruits and Vegetables Disease Investigation, Beltsville, Maryland, reported on orchard management practices which would assist in meeting the labor shortage. Other speakers were: L. S. Hitchner, Agricultural Insecticide and Fungicide Association, New York City; Porter R. Taylor, Washington, D. C.; Dr. F. W. Parker, U.S.D.A.; Drs. Harold J. Miller, Fred H. Lewis, R. S. Kirby, Harold K. Steiner, and Professor J. O. Pepper.—J. U. RUEF, Sec'y, State College.

IOWA—Indications throughout the State are for an excellent "growing" spring this year. Reports indicate a good set of fruit buds on apple, pear, cherry, and plum. Small fruits are in good condition with the exception of strawberries which were not covered, and possibly some red raspberries which have suffered winter injury.

With the exception of sub-zero temperatures on February 12, Iowa has enjoyed a mild winter with little damage to fruit buds, excepting peach buds. There has been quite a little moisture with several inches of snow but very little frost in the ground.—R. S. HERRICK, Sec'y, Des Moines.

WISCONSIN—Fruit grower associations in eight counties in this State held meetings during the first two weeks in March. Attendance ranged from 60 to 100 at each meeting.

Interest in fruit growing problems was keen. The principal topics discussed were control of apple maggot, new fruit varieties, the Wisconsin Apple Institute, and cultural problems. Speakers were C. L. Kuehner, Extension Horticulturist, and H. J. Rahmlow, Secretary of the State Horticultural Society.

All associations voted to join the Wisconsin Apple Institute. Membership in the Institute now is nearing the hundred mark.—H. J. RAHMLOW, Sec'y, Madison.

MASSACHUSETTS—The Southeastern Massachusetts Blueberry Growers' Association was organized at Wareham on February 29, with 26 charter members, representing at least 30 acres of cultivated highbush blueberries. The immediate purposes of the Association include cooperative buying of supplies and dissemination of useful information to the membership.

This is the first such organization of blueberry growers in Massachusetts and its formation is indicative of the growing importance of this crop.

Officers are: J. F. Carlton, Sandwich, President; J. H. Putnam, Orleans, Vice-President; and Mrs. J. L. Kelly, East Wareham, Secretary-Treasurer.

It is very probable that the relatively few peach trees in this State will bloom and bear a crop this year. Due to the absence of low minimum temperatures this past winter, there has been a low mortality of fruit buds. In the State College orchard where there are tender varieties such as Hale, Elberta, Halehaven, and Goldeneast, there is a maximum of 30 per cent of fruit buds killed. In most cases, there is much less than 30 per cent killed.

There has been active grower interest this spring in the theory and practice of pruning tree fruits. Ten demonstrations, organized by Professor W. H. Thies, Extension Pomologist, were well attended. The "indoor-outdoor" meetings were particularly well liked. Pruning theory, explained on a blackboard indoors, was put to test in several growers' orchards. Despite labor shortages the usual amount of pruning has been done by many orchardists.

Several growers are purchasing Epsom salts in ton lots for soil applications in orchards where magnesium deficiency symptoms have been prevalent. Also, soil application of high magnesium limestone in orchards is on the increase.—LAWRENCE SOUTHWICK, Amherst.

KANSAS—The peach and pear situation in Kansas is not too good for the coming season. H. L. Drake reports all peach and pear buds killed by the sub-zero weather, February 11-12, in his orchard near Kansas City.

R. G. Yapp, Inspector for the northern part of Kansas, reports that there is serious damage to peach and pear buds in the entire Missouri River district. A. L. Calkins, Inspector for the southern half of the State, reports that much better conditions exist in his district. He says there will be enough live buds in many places for a crop.

James Farley, Hutchinson, passed away at a Hutchinson hospital on February 19. He was one of Kansas's best known and successful apple growers. He was a life member of the State Horticultural Society and will be greatly missed by that group.—GEO. W. KINKEAD, Sec'y, Topeka.

MARYLAND—Growers of strawberries, raspberries, peaches, and apples are going through a period of watchful waiting in anticipation of price ceilings. Considerable figuring has been done by grower committees and organizations to support any contentions regarding production costs since facts, not opinions, will decide the outcome. A fair profit is desired and no more than that. Growers of small fruits will be guided in growing present and future crops, according to price ceilings established this year.

The labor situation is causing concern, and growers' committees are not standing by, waiting for things to happen. Conferences have been held, regarding possible sources of harvest labor, and state farm labor officials are cooperating fully.

The draft status of orchard labor is receiving attention in the Cumberland-Shenandoah area. So far, the draft has not seriously upset the permanent supply of orchard labor, but further reduction in number of laborers will be a handicap. Growers do not want to appear unpatriotic or unreasonable, but they need help to produce a food crop.—A. F. VIERHELLER, Horticulturist, College Park.

FLORIDA—The long dry spell which threatened citrus crop, retarding the bloom for next year's harvest, was broken early last month. Rains fell copiously in all producing sections and fruit benefited accordingly.

MAINE—The Maine State Pomological Society met at the University of Maine on March 8-9 as a feature of Farm and Home Week. Apple nursery stock, orchard soil fertility and management, and the apple spray and dust schedules were topics of formal discussion. Dr. N. L. Partridge, Michigan, and Dr. Philip Garman, Connecticut, were guest speakers.

At a meeting of the Maine Federation of Agricultural Associations, it was gratifying to the Pomological Society that one of its delegates, W. J. Ricker, Turner, was elected President of the Federation.

Wilson M. Morse, orchardist of Waterford and Vice-President of the Pomological Society, recently was appointed to the Agricultural Advisory Council of the University. It is the function of this Council to advise the Administration in matters pertaining to resident teaching, extension, and research in agriculture. President Arthur A. Hauck is Chairman of the Council, and Dean Arthur L. Deering, Secretary.—J. H. WARING, Professor of Horticulture, Orrono.

INDIANA—President V. V. Clarke, Bristol, a quality-plus apple grower and leading peach producer of the Hoosier State, represented the Indiana industry at the recent National Peach Council Meeting in St. Louis.

V. V. CLARKE

President Clarke reports that the sub-zero temperatures on February 12 reduced peach prospects in the important Elkhart County area to not more than a half crop for 1944. Condition is much better in the Laporte County area. Growers in the north central area, where there is no concentrated peach section but a number of scattered plantings, generally report serious reduction, or complete loss, of crop. In the southern part of the State, damage to the crop apparently was negligible so that Indiana still has prospects for a fair crop of peaches in 1944.

Indiana apple growers generally report only a moderately heavy set of fruit buds. In orchards where protection against apple scab was inadequate in 1943, growers report that the bud crop is light. However, Hoosier State growers hope for a much heavier crop than was produced in 1943.

Strawberry acreage in Indiana has dropped to its lowest point in more than a decade. According to Government estimates, Indiana growers will harvest from approximately 1900 acres this season. A relatively high percentage of those acres are two years old. There is a tendency to increase the number of new acres, planted in 1944, and total new plantings should exceed the acreage set in 1943, but it will be limitied some because of a scarcity of plants.

Indiana orchardists are concerned over the labor situation. Last year most orchardists were able to obtain sufficient help to grow and harvest a crop without serious loss of fruit. The selective service and war industries have reduced seriously the supply of labor.

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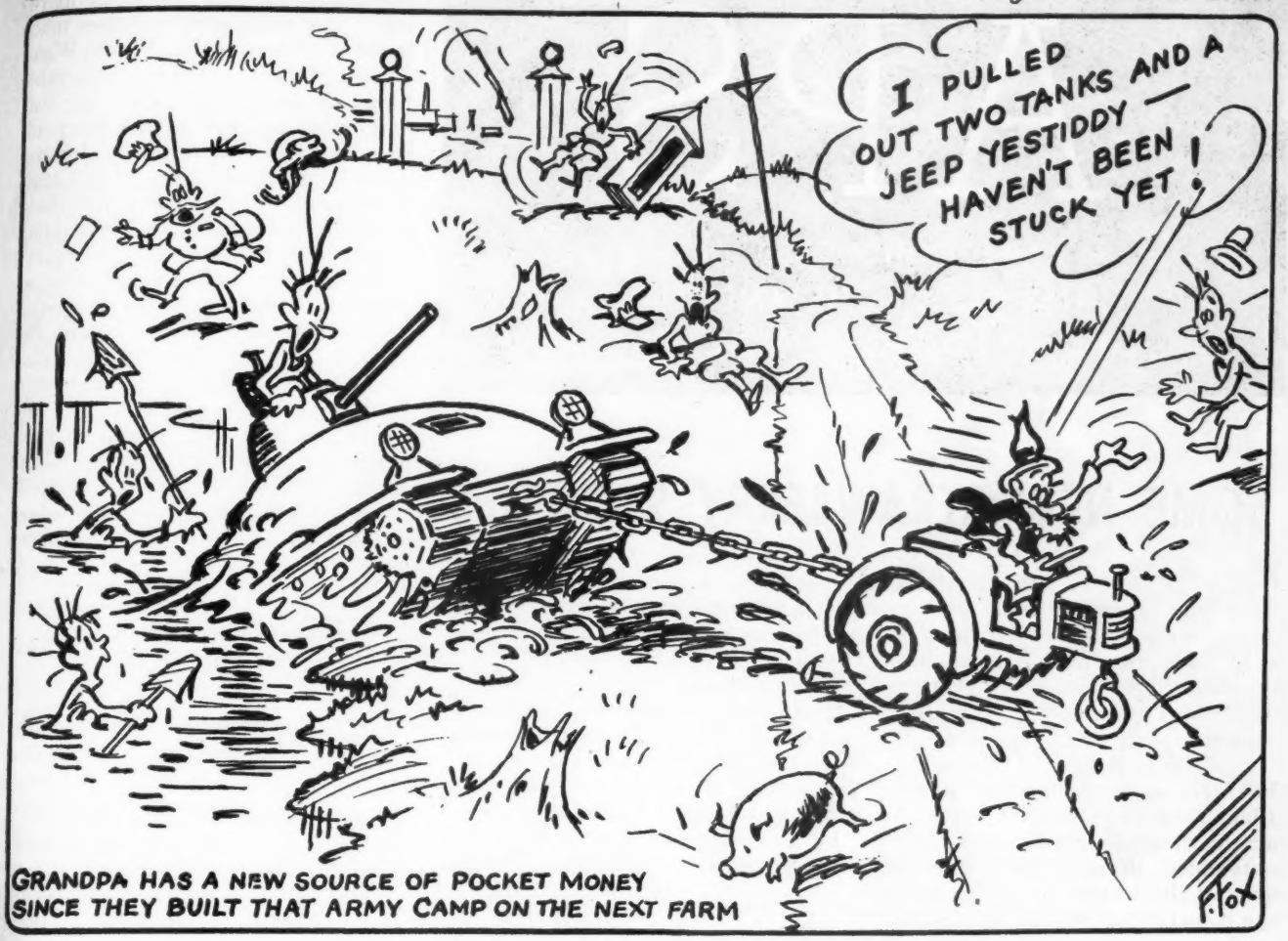
SPEAKING OF TRACTION — By Fontaine Fox



How to get the facts about traction . . .

MAYBE you need new tractor tires for your spring and summer work. Before you buy tractor tires why not find out for yourself just what type of tread design will give you the greatest traction? On your neighbors' farms you will probably find all makes of tires in operation. Watch them at work. Compare them carefully. Remember that in order to provide the greatest traction a tire should

1. bite into the soil
2. grip the ground without slipping
3. be self-cleaning. (If the tread clogs, it just can't bite and grip.)

Make this check and we think you will agree that the tough, long-wearing B. F. Goodrich Silvertown gives you just the kind of traction you want.

Watch the Bite: the extra-high cleats and the open-center design of the Silvertown give a deeper bite.

Watch the Grip: paired cleats of the Silvertown give double grip. Extra-heavy shoulders provide maximum pull.

Watch for Self-Cleaning: the tread design is open — no mud-catching pockets. And because it's open, it's flexible—the cleats spring the dirt free with a slingshot action.

You can find all the facts about tractor tire traction right down the road on your neighbors' farms. See for yourself. Then see the nearest B. F. Goodrich Dealer or Silvertown Store for Hi-Cleat rear wheel tires.

The B. F. Goodrich man also has tires for front wheels and for implements as well as Silvertowns for cars and trucks.

More tires are available now because your government knows just how important farming is in winning the war.

In war or peace

B.F.Goodrich

FIRST IN RUBBER

APS

A PAGE CONDUCTED IN THE INTERESTS OF THE AMERICAN POMOLOGICAL SOCIETY

SOME NEW STRAWBERRY VARIETIES

PROFESSOR W. W. MAGILL, Extension Horticulturist in Kentucky, related at the APS meeting at St. Louis that some new and highly productive strawberry varieties had given convincing evidence of superiority for that area in 1943.

Said Prof. Magill: "Tennessee No. 148 (Tennessee Shipper) outyielded Blakemore 115 24-quart crates per acre in the Paducah, Kentucky, area; outyielded Premier 120 crates per acre in the Louisville Area; and at the Experiment Station farm in Lexington, more than doubled the yield of either Blakemore or Premier, in fruiting tests in 1943. Its fruiting season is almost identical with that of Premier and Blakemore. Its carrying qualities far exceed any variety I have ever seen, is much better than Blakemore, both for truck and refrigerator car shipments. It fruits on stiff upright stems, like the Gandy variety. The plants are vigorous, show no leaf sport or yellows, thus far.

"The Tennessee 263 (Tennessee Beauty), in less extensive fruiting tests, is equally as outstanding in production and carrying qualities. Its fruiting season is the same as Aroma, or a week later than Blakemore.

"Both these varieties were developed by the Tennessee Experiment Station, through plant breeding, under the direction of Dr. Brooks Drain and Louis Fister. They are the two outstanding varieties from a total of over 2,000 crosses.

"I, personally, became interested in No. 148 the year only one parent plant and two runner plants were in existence. I never saw so many berries on a plant. The ripe berries were almost as firm as a ripe apple, and the size was better than Blakemore. The quality was nothing to brag about, being as sour as a Missionary or a Klondike. Mr. Fister told me that Dr. Drain wanted to eliminate it from future tests on account of its quality, but I raised the argument that the Northwest had developed a great apple industry on size and color, and I wanted to watch the outcome of future plantings.

"At my request, two years later Mr. Fister sent me a crate of berries by local express from the West Tennessee Substation, Jackson, Tennessee, to our Experiment Station at Lexington (approximately 300 miles). The crate contained a few quarts, each, of such varieties as Tennessee No. 148, Tennessee No. 263, Blakemore, Premier, Aroma, Klondike, Missionary, etc. The crate was shipped on Friday and our horticultural staff examined them thoroughly on Monday morning. The berries in the quarts of Tennessee 148 and Tennessee 263 were still in good condition, about half the Blakemore were soft, and all the Premier and Aroma were decomposed.

"The spring of 1942 we bought all the plants that were available in Tennessee (about 12,000). We gave them out to good Kentucky berry growers in lots of 1,000, and carefully observed their development beside the Blakemore and Premier varieties.

"During the harvest season of 1943, Mr. W. D. Armstrong, our Western Kentucky Horticulturist at the Princeton Substation cooperated in packing a test crate containing eight quarts of Aroma, eight quarts of Blakemore, 15 quarts of No. 148 and one quart of No. 263. The berries were grown near Paducah, Kentucky. The crate was picked on Tuesday, loaded in a refrigerator car of berries at 9 p.m., pre-cooled at 1 a.m. and rolled to Chicago.

"An agricultural representative of the I. C. Railway followed the car to Chicago, where the car was opened for sale on Thursday morning. The new berry varieties made quite a 'hit' on the South Water Street Market. After considerable handling in Chicago, the crate was carried as luggage to the Horticulture Department of the University of Illinois, where Dr. A. S. Colby, the Strawberry Authority of Illinois, carefully examined the remaining contents of the crate on Friday morning. Dr. Colby reported to me that the Tennessee new varieties were still in good condition, the Aromas were decomposed badly and about half the Blakemores were soft.

"We packed a few quarts of the Tennessee No. 148, grown in Lexington, in our local freezer locker plant. We think they are a swell variety for this purpose. Our wives think they are 'tops' for strawberry jam."

USDA STRAWBERRY INTRODUCTIONS

TWO new strawberry varieties, the Midland and Fairpeake, were announced in Circular 694, United States Department of Agriculture, January issue, by Dr. George M. Darrow, Senior Pomologist.

The Midland originated as a cross of Howard 17 x Redheart. It is notable for its large fruits and productiveness. The plants are vigorous, the leaves are large and resistant to leaf spot and leaf scorch. The fruit ripens with Blakemore or slightly later. The berries are deep red in color and the flesh is rich and juicy. It has a subacid flavor and rates good in dessert quality though it is not equal to Dorsett or Fairfax. It is recommended for extensive trial from Maryland to as far west as Iowa.

The Fairpeake variety was introduced as a late variety of the highest dessert quality. The plants are medium in vigor and make a fair number of runners. The leaves are resistant to leaf spot and leaf scorch. The berry is ripe at about the same time as Gandy and Aroma. The fruit is medium to large in size, somewhat irregular, rich red and attractive. The flesh is firm and juicy and red to the center. Its dessert quality is very high. It is recommended that Fairpeake be grown in moist soil since it is late in season.

H. L. Lantz
SECRETARY

• HARLOW ROCKHILL •

August 28, 1866—March 1, 1944.

HARLOW ROCKHILL was probably among the last of that group of a pioneering type of fruit breeder, to which belong Gideon, Patten, Burton, Terry and others of midwest fame. These men were unique in that none of them had had the benefits of a formal education in preparation for the work which they did in the field of fruit breeding. Yet, each of these men achieved the distinction of originating new varieties of fruit which are well known and which now are widely grown.

Harlow Rockhill achieved distinction as a strawberry breeder, when, in 1912, he introduced the Progressive everbearing strawberry. This well known variety resulted from a cross made in 1908 of Pan American x Dunlap. During later years, Rockhill made many crosses and grew thousands of crossbred seedlings. During the '20's he introduced a remarkable everbearer under the name of Rockhill, which is becoming increasingly popular in the Pacific Northwest. In the middlewest, the Wayzata, thought by many competent horticulturists to be Rockhill, is very popular. At about the same time, a June bearing variety similar in fruit to Rockhill was developed and seems destined to be valuable.

Rockhill did his work on the home farm at Conrad, Iowa. He brought together a unique collection of many fruits and nuts with which to work and, in addition, made many crosses using pollen shipped in from distant points. There is a row of peach hybrids in the Rockhill orchard which were produced by crossing the Bailey peach x Prunus davidiana, known as the Davidiana peach of the Orient. These seedling trees are probably 20 years old, hardy and productive. The fruits are smaller

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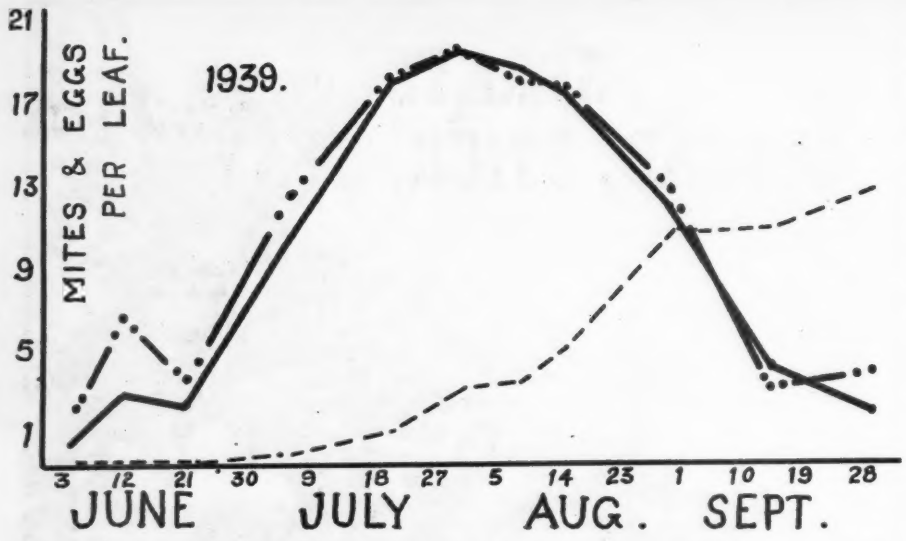


Fig. 1. Representative curves showing the red mite populations throughout the season. Solid line, flotation-sulfur plot; dot-dash line, liquid lime-sulphur plot; dash line, dormant oil followed by flotation sulfur.

CONTROL OF RED MITE

(Continued from page 9)

counting, with the aid of a binocular microscope, all mites present on a given number of leaves, taken from each tree in each plot. Experiments identical with those of 1939 were also made in 1940, 1941, 1942, and 1943. The data taken during this 5-year period have now been summarized with the following results.

Each season the mite population on the liquid lime-sulfur and the flotation-sulfur plots have been identical. This is shown quite clearly in Figure 1, where the results from the plots in 1939 are depicted graphically. This is representative of the results from any of the five seasons. In view of this mass of positive data, it can be definitely stated that no difference exists between liquid lime-sulfur and flotation-sulfur-paste as far as their effect on red mite is concerned.

As previously indicated, other schedules using certain commercial brands of wettable sulfur have been tested. The results were identical with those from the lime-sulfur and flotation-sulfur plots.

In visiting commercial orchards prior to 1939, it was frequently noticed that many well kept and well sprayed orchards were severely infested by red mite; whereas adjacent uncared-for or semi-cared-for trees were escaping injury. Preliminary work, some of which was done in Ohio as early as 1926, as well as reports from other experiment stations, indicated that the repeated use of sulfur in the spray schedule might be responsible for this condition. To test this possibility, spray schedules which omitted sulfur in from two to four applications were, therefore, arranged and included in the tests.

One schedule in which no sulfur or other fungicide was used after the petal-fall spray has been included in four of the five years. This schedule has shown consistently low mite populations throughout the season, with foliage damaged far less by mite attack. Seasonal mite populations on a flotation-sulfur plot, as compared with one which did not receive sulfur after petal fall, are shown in Figure 2. This graph is representative of the entire four years' results and, together with data taken from other plots sprayed with different numbers of sulfur applications, points definitely to the fact that sulfur favors the red mite. Check trees, which received no fungicide whatsoever, have always carried the lowest numbers of mites.

Sulfur applications favor the red mite because they destroy one of the red mite's most effective natural enemies. This natural enemy is another mite, a predaceous form, which destroys large numbers of the eggs and young of the red mite. The fact that this friendly mite is so effectively destroyed by sulfur is very unfortunate.

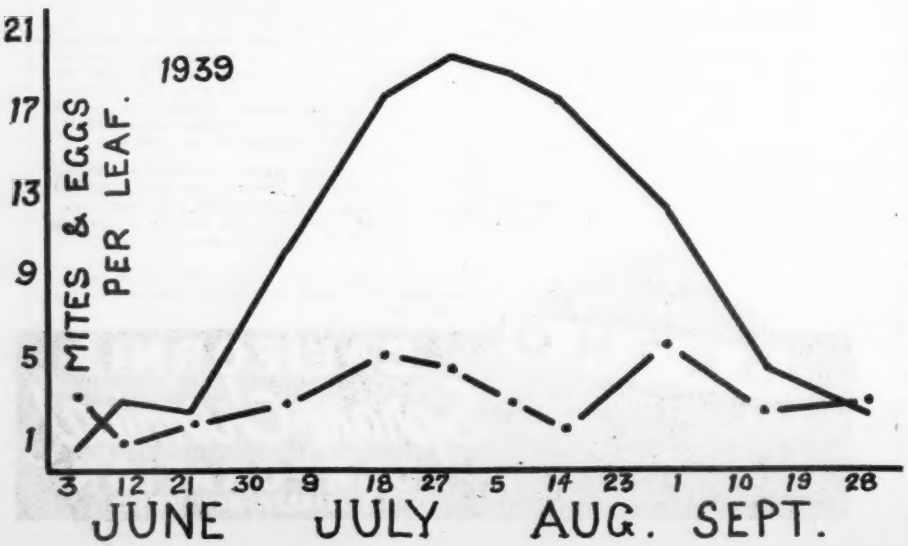
Since some fungicide must be available for summer use, it was hoped that some of the newer materials would not affect the predaceous mites so adversely. A promising new fungicide has been tested as to its effects on red mite, but two years' results indicate that this material is also quite toxic to the predaceous mite. However, it can be used in combination with summer oil, thus giving a combination that is effective against both red mite and disease during the summer months. Unfortunately, the inclusion of the oil in any schedule to control red mite also destroys the friendly mites.

Thus, at the present time, our efforts to utilize the natural enemies of the red mite in control efforts seem to be stopped. The problem of keeping the red mite in check, therefore, remains quite largely in the field of chemical or spray control. Since we must still rely on sprays, let us examine those materials of known value, together with new developments in this field. What are we to use against the red mite and how are we to use it?

The status of the dormant oil spray remains about the same. This spray has been used for many years and is especially effective against overwintering eggs. It is cheap and in most seasons it effectively controls

(Continued on page 33)

Fig. 2. Representative curves showing red mite populations. Solid line, flotation-sulfur plot; dot-dash line, plot with no sulfur after petal-fall spray.



SHERWIN-WILLIAMS ARSENATE of LEAD and SPRALASTIC . . . .

A COMBINATION THAT WON'T RUN AWAY FROM ITS JOB

The clear water run off shown in the above photograph is PROOF that S-W Spralastic causes Arsenate of Lead to stick to the fruit and foliage in a heavy uniform coating. You can make this test in your own orchard.

As the photograph, right, shows there is no "running off" from the job of codling moth control when Sherwin-Williams Arsenate of Lead is used with Spralastic added, for Spralastic is the most efficient spreader and sticker ever developed.

Sherwin-Williams Arsenate of Lead tests 98% active ingredients, which is 2% higher in content than some other Arsenates of Lead. It also has a low water soluble arsenic content. These superior chemical properties, plus the extreme physical fineness of S-W Arsenate of Lead, give maximum control of codling moth.

To give your Arsenate of Lead still greater efficiency use Spralastic. Its use actually causes three to four times more Arsenate of Lead to remain on the fruit. Spralastic does this by increasing the adhesive and spreading properties of the Arsenate of Lead particles and eliminating wasteful run off. Study the photograph shown on the right. The use of Spralastic results in a uniform, heavy coating of Arsenate of Lead on apples, which is essential for effective codling moth control.

SAFE-N-LEAD

Prevents Arsenical Injury

For complete protection of apple foliage throughout the growing season use Safe-N-Lead. Added to Arsenate of Lead in the spray tank, Safe-N-Lead converts the water soluble arsenic into a stable compound which will not "burn" apple foliage, but instead stimulates the growth of healthy, green leaves.

Hydrated Lime does not prevent arsenical burn, is detrimental to apple foliage, and its use reduces the effectiveness of Arsenate of Lead.

Cloudy run off shown in above photograph occurs when lime is used with Arsenate of Lead, carrying off a heavy percentage of Arsenate of Lead, leaving the deposit reduced and spotty. You can also prove this in your own orchard.

SEND FOR FREE FOLDERS which will give you the whole story of the effectiveness of these Sherwin-Williams products for maximum control of codling moth with wartime conservation of spray materials. Address Insecticide Dept., The Sherwin-Williams Co., 101 Prospect Ave., Cleveland, Ohio.

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DISEASES OF STRAWBERRY

(Continued from page 13)

shown to be capable of causing root rot of strawberries under experimental conditions. All these fungi are soil-inhabiting, and are not limited to strawberries but can cause root rots on other crops. It is generally accepted that, although these fungi are the ultimate cause of root decay, other factors, such as drouth, winter injury, and poor drainage, are responsible for the initial injury which weakens the plants and makes them susceptible to fungus infection. Of these, winter injury is considered the most important, and heavy mulching for the winter is strongly recommended. The mulch should be applied early, preferably during late November or early December, before the soil temperature has dropped too low. Other sound cultural practices are obvious. Soil drainage is very important. Rotation helps to reduce losses from root rot. New land should be used when available. A crop of soybeans plowed under has a very beneficial effect in reducing root rot of strawberries.

A second type of root rot, known as "red stele," is of special interest. It is a new disease which was first observed in Illinois about 12 years ago and which has now spread to practically all the northern and western states. The disease has not been found in the South (south of Tennessee and Arkansas) and it is believed that high summer temperatures prevent its spread in this region. The name is derived from the fact that the stele (core) of the larger roots turns dark red in color. The smaller roots rot completely. The affected plants are much stunted in growth, the larger leaves wilt, and the younger leaves are small and somewhat bluish in color. In contrast to the other root diseases, red stele is caused by a fungus which, as far as is known, parasitizes strawberry roots only and does not attack other crops.

Workers of the United States Department of Agriculture are trying to develop strawberry varieties resistant to red stele, and their work appears very promising. Some of their selections show marked resistance.

Diseases Caused by Nematodes (Eel-worms)

There are several strawberry troubles caused by nematodes. One species of nematodes causes the familiar root-knot disease. This is not limited to the strawberry, but attacks hundreds of species of plants in warm climates. This is not a problem in the northern states (except in greenhouses) because the nematodes can not survive the winter temperatures.

Rotation and avoidance of very sandy soils, in which the nematodes are most active, is the only practical relief from this trouble.

The most serious nematode disease of the strawberry is the "dwarf" or "crimp." This is caused by a species of eelworms which invades the buds and produces stunting, distortion, and extreme malformation of the leaves. The leaves of infected plants are small, narrow, brittle, shiny, and often bronzed. Often the bud is killed and the plant becomes "blind."

There are two strains of this disease, the "summer dwarf" and the "spring dwarf," caused by two closely related species of nematodes. The symptoms of both are the same, but the summer dwarf is limited to the southern states, whereas the spring dwarf extends along the northeastern coast states as far north as Cape Cod. The summer dwarf is active during the warm season from late spring to fall and interferes primarily with the production of plants, but affects fruit production very little, except in Florida where the nematodes remain active during the winter. The spring dwarf, on the other hand, appears early in the growing season and interferes materially with the production of fruit. The flower buds are killed before they come out, and affected plants produce practically no fruit.

Systematic roguing of diseased plants, particularly in the plant beds, is the most promising method of keeping losses from dwarf to a minimum. Rogued plants should be removed from the field and burned.

Fruit Rots

Undoubtedly, the most obnoxious of all disease-producing organisms are those causing fruit rots, because they literally rob the grower of the fruits of his labor. They destroy the final product, after much effort and money have been spent in making it. Fruit rots don't just happen; they are caused by various molds which live in the soil or on decaying plant refuse. These molds produce billions of spores ("seed") which are scattered by means of wind, rain and the handling of the berry pickers. The spores require moisture in order to germinate and infect the fruit. That is why berry rots are more prevalent if prolonged

(Continued on page 37)

NUT GROWERS NEWS

NUT CULTURE IN MISSOURI

A VERY useful bulletin for planters of nut trees in the Middle West has been issued recently by the Missouri Agricultural Experiment Station at Columbia, Missouri. It was prepared by Professor T. J. Talbert and may be secured on request from the Missouri Station.

In this publication of 32 pages all of the common nut trees are discussed with emphasis on their usefulness for Missouri conditions. Their nutritive value, and usefulness as shade trees, for preventing soil erosion and for highway planting are discussed. The author points out that much land that now grows "weed" trees is suitable for walnuts, pecans, and hickories. Nut trees are adapted to a wide range of soils but grow better and are most productive on deep well-drained soils where they grow rapidly and, eventually, reach a great age. On depleted soils manure reinforced with 20 to 30 pounds of superphosphate per ton is recommended at the rate of eight to 12 tons to the acre. Cultivation or mulching is recommended for young trees until they are well established. Then grass may be allowed to grow beneath them. Insect pests are few, but the walnut caterpillar is sometimes troublesome and should be controlled with an arsenical spray.

The Thomas black walnut may bear a few nuts the second year, while other grafted walnuts, pecans and hickories often begin bearing from two to four years after setting. Hybrid chestnut seedlings bear in the second or third year. Seedling black walnuts bear a few nuts at eight to 10 years of age, but profitable crops of nuts are not to be expected until the trees are 10 or 12 years old.

Of especial interest in the bulletin is a table presenting data on the cracking quality of various black walnut varieties, as grown in Missouri.

Considerable attention is devoted to the propagation of nut trees. The raising of seedlings and details of grafting and budding are fully presented. Various methods are illustrated.

The midwestern nut culturist will find this publication a very useful piece of nut literature. It should be very helpful in stimulating the planting of improved named varieties of nut trees in that area.—GEORGE L. SLATE, Sec'y Northern Nut Growers Assn., Geneva, New York.

STATE NEWS

(Continued from page 16)

ordinarily depended upon. Recent orders of Selective Service will further complicate the situation.

The open weather of the past winter has allowed commercial growers to do a fair job of pruning. This will reduce, somewhat, the labor requirement for certain jobs during the growing season and it will aid materially in obtaining satisfactory control of insects and diseases in these orchards.—MONROE McCOWN, Sec'y, Lafayette.

VIRGINIA—The Board of Directors of the Virginia State Horticultural Society, at a meeting, March 7, instructed its representative on the National Apple Council to seek a single price ceiling for apples at retail for 1944, rather than the impractical, complicated, unworkable ceiling attempted this past season.

The Board also instructed its representative to the Council to urge that, for the purpose of deferring orchard men, one acre be considered a unit instead of two acres as now prevails. It was the unanimous opinion of the Board that one man could not care for 32 acres of producing orchard, particularly in mountain sections, and in view of the inefficient and inexperienced labor which, to an extent, now must be depended upon.—W. S. CAMPFIELD, Staunton.

MICHIGAN—Through the Michigan State Horticultural Society and the Extension Service, seven one-day district fruit meetings are being held in Michigan this year in the commercial fruit sections to assist growers in their insect and disease control problems.

Fruit growers are vitally interested in labor saving devices, particularly for brush removal as the very favorable winter season has allowed for more pruning than is usually accomplished during the winter.—H. D. HOOTMAN, Sec'y, East Lansing.

MEXICAN HONEY

PRODUCTION of honey in neighboring Mexico is derived from both wild and domestic bees. The latter, referred to as the "Italian bee," is believed to have been brought in from the United States. It is probable that some domestic hives are captured wild hives.

According to trade estimates, production from the black or wild bee is about equal to that from the domestic bee. Indications are, however, that the percentage is gradually shifting in favor of the domestic bee which is regarded as being a higher producer and easier to handle.

According to the 1940 census, the number of domestic hives in Mexico that year totaled 987,708. Apparently weather conditions and prices are the two factors that have the greatest influence on production.

During the past two years prices have been extremely favorable, and honey collection has been more extensive than usual. It is estimated that the total production during 1943 was in the neighborhood of 11,000 to 13,000 short tons.

"THE BEST IN FRUIT"

By DR. U. P. HEDRICK

FOR 30 years the writer's life was devoted to breeding new fruits. During this time, aided by several very capable assistants, many thousands of seedlings, practically all crosses, were fruited. Some 200 of these were named and were sold by the New York State Fruit Testing Co-operative Association, Geneva, and all hereafter described are offered by the nurserymen of the country, as well as the Fruit Testing Association.

Having reached the retirement age a few years ago, I now sit on the sidelines, watching the development of these fruits much as a parent keeps his eye on the growth of his children. Many of the small fruits I grow in my garden from year to year. I buy or beg samples of the tree fruits to be described.

I am now an unprejudiced observer, caring only to see that the best of the several fruits find a place in the northeastern states. Most of these fruits I have known from the day they were thought good enough to name, and I have watched them growing in orchards and gardens. From year to year I have seen them exhibited and heard them discussed at fruit growers' meetings. I want in this article to give my opinion of a few of the best of several tree fruits.

My favorite apple is Macoun, a seedling of McIntosh, which it resembles in color, texture, shape, flavor, and aroma. I recall no apple that suits my taste as well as a crisp, juicy Macoun. The apples run small and the crop must be thinned. It should be picked just after McIntosh and it keeps longer.

Milton is another apple which I like very much. It, too, is a seedling of McIntosh but ripens a month earlier than its parent. It is the handsomest apple of which I know, pinkish red with heavy bloom. The flesh is white, crisp, juicy, and sprightly.

Cortland, another McIntosh seedling, comes third in my list. This apple is now so well known that I need say little about it. It competes with its parent in the northeastern states, being preferred by many growers because it does not drop so early and keeps longer. Some consumers like Cortland better than McIntosh, others prefer the older sort.

Two other apples of the McIntosh tribe please me very much, Early McIntosh and Sweet McIntosh. The names of the two are sufficiently descriptive. These five sorts give a McIntosh-like apple for every day in the year.

Of the 30-odd apples named at the station, three seedlings of Delicious are notable. Two of these, Medina and Orleans are admirable. They are in most character counterparts of Delicious, but in New York grow larger, color better, and to my taste are better because they are more sprightly. Of the two, Orleans is the better for me. Both have the same season as Delicious. Sweet Delicious is far the best sweet apple that grows in this region.

Of the 11 pears which came into being during my regime at the station, four are pre-eminently good; none are better for New York, at least. All are less susceptible to blight than Bartlett, all pears at the station having been bred for blight resistance.

At the moment I have in the house a box of the far-famed Comice from Oregon and a basket of Ovid, one of the station pears. Both are delectable. I hope it is not prejudice on my part that leads me to say that Ovid is better in quality and handsomer in appearance than Comice. To me, it is the best of all Winter pears. When well ripened it is the size and color of Bartlett, but is covered with russet patches which enhance its beauty.

Phelps is the type of Bartlett but it ripens around Thanksgiving and keeps until Christmas. Its sprightly vinous flavor commends it to me. Unfortunately it is a little dull in color.

Early Seckel is an early-ripening pear with the delectable Seckel flavor, and has the same trim form and modest color of the well known Seckel of which it is a seedling. Early Seckel is the best very early pear of which I know. The crop ripens two or three weeks earlier than that of its parent but keeps longer in storage.

Of the four pears to be listed, Gorham is best known and most widely planted. The season is two weeks later than Bartlett, and the variety might well be named "late Bartlett." I like to think that with the pear I am an epicure, preferring it to any other tree fruit. As an epicure, then, I am very certain that the flavor of Gorham, either eaten out of hand or canned, is spicier, richer, more buttery, and, all in all, better than that of Bartlett.

The station at Geneva has done little work with peaches, as the soil and climate are not very suitable. The New Jersey and the Ontario stations have bred some exceedingly good peaches. To my taste the best four from New Jersey are Delicious, Golden Jubilee, Marigold, and Oriole. The Vineland station, Ontario, has sent out four peaches, each beginning with V, which might well be called the four Victories. The four are Valiant, Vedette, Veteran, and Viceroy. All are especially suited for home planting.

While much work for many years has been done at Geneva to obtain better sweet cherries, only three varieties have been named, each of which is choicely good.

Seneca is remarkable for earliness. The cherries ripen in the first week of June, two weeks earlier than Black Tartarian. The cherries are purple-black, with juicy, melting flesh, and a rich sweet flavor. The pit is free and the skin does not crack. The tree is a handsome ornamental, making the variety suitable for the back door-yard.

Gil Peck bears large, dark, purple-black cherries, which are firm fleshed, juicy and richly flavored. The season is a little later than that of the well known Schmidt which it resembles, but, unlike that sort, the skin does not crack.

Sodus has the same parents as Gil Peck but it is a different cherry. The cherries are light colored while those of Gil Peck are dark colored. They resemble the Napoleon, known by all, and have the same season. Sodus is ideal for home plantings.

For years the station has been trying to improve the plum, a fruit which, as everybody knows, is widely neglected. Of many crosses that have fruited, to my palate and eyes, three are exceptionally good.

Albion is the best of the three. It is the last ripening good plum in this region. It is much like the popular Grand Duke, but has larger fruits, the quality of which is much higher. The tree is especially vigorous, healthy and productive.

Hall is a cross between two of the best known old plums, Golden Drop and Grand Duke. The fruits are blue, very large and are better flavored than those of either of the two parents.

Lastly, Stanley is named as a very good plum of the Grand Duke type. The fruit is large, dark blue, with a very heavy bloom. The flesh is greenish yellow, tender, firm, and good. Stanley will be mostly grown for the market, but it has much merit for home planting as well.—Reprinted from HORTICULTURE.

AMERICA MEASURES ITS LEADERS BY THEIR CAPACITY TO SERVE

CHEVROLET
First in Service

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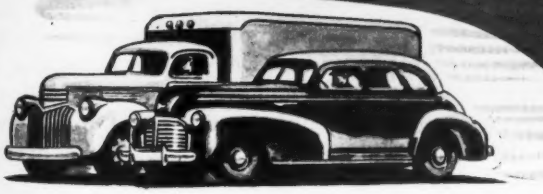

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A mask will protect against sickness from nicotine vapors. The cannister contains a sponge which is moistened with 10 per cent solution of citric acid.

CODLING MOTH CONTROL

(Continued from page 8)

nicotine sulphate is effective but nicotine bentonite is ineffective as a moth-killing agent; (2) the spray must envelop the tree quickly and the tree must be completely sprayed within a short time; and (3) it is important to spray the top half of the tree at the same time or before the lower half is sprayed in order to prevent escape of the moths by way of the top.

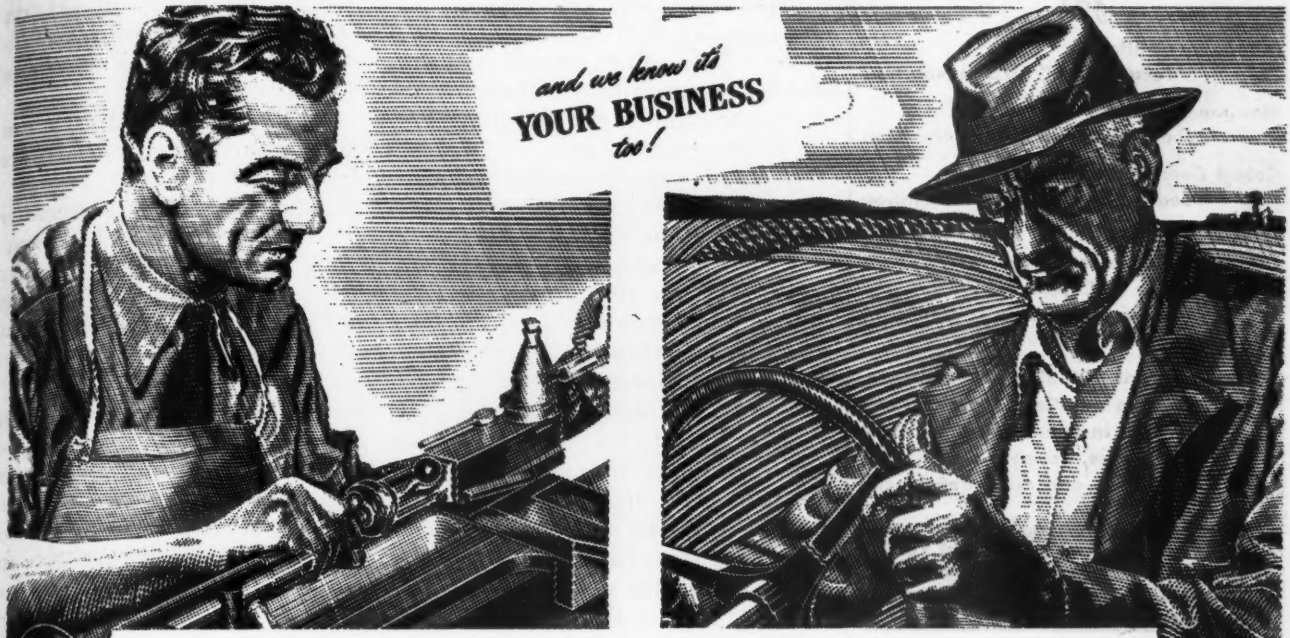
In practical operations nicotine sulphate at three quarters of a pint to one pint per 100 gallons is used in the second and third cover sprays. If the weather is warm and moth emergence is high as indicated by bait pail collections when the first cover spray is applied, nicotine is also included in the first cover spray to destroy the moths before they deposit many eggs. In severe infestations summer oil emulsion at the rate of two to four quarts per 100 gallons is added to lead arsenate and nicotine in the second and third cover sprays to form a triple-acting spray combination for destroying moths, eggs and young worms.

Such a spray combination is most effective when applied on both sides of a tree-row during the same day rather than spraying one side with the wind and then waiting until the wind changes to spray the opposite side. Waiting a day or two until the wind changes to spray the opposite side will reduce by 50 per cent the effectiveness of nicotine as a moth-killing agent, for it is fair to assume that the moths are more-or-less evenly distributed over the trees at the time of spraying. Furthermore, moths usually fly about the tree and thus redistribute themselves during late afternoon or near sundown. Experience has indicated that moths must be hit by the nicotine spray in order to make certain their destruction. Nicotine residue persisting on the foliage does not appear to kill moths the following day.

Since nicotine is expensive, its use is limited to orchards where the usual codling moth control program has not been satisfactory. The object in such instances is to destroy the large moth population during May and June and thus reduce egg laying as much as possible. When oil is added in ovicidal dosage in the second and third cover sprays, the consequent hatching of young worms is further reduced. Thus, it has been possible to lower first-brood worm attack to a point where lead arsenate will give results without having such a large percentage of the fruit showing conspicuous and numerous stings. In practice the spray program is usually concluded by a fourth cover spray of lead arsenate (without oil or nicotine) against the first brood and then a fifth cover (also without oil or nicotine) in July or August against the second brood.

Anyone susceptible to sickness from nicotine can be protected by wearing a mask in which is placed a sponge dampened by a solution of about 3.3 ounces of citric acid powder dissolved in one quart of water. It is necessary to moisten the sponge not more than twice daily; that is, at the beginning of work in the morning and at noon. At the end of each day the sponge should be washed in clear water.

VICTORY IS OUR BUSINESS



Partners in Production

When war struck at us in all its sudden fury, America's two largest industries —farming and manufacturing—were faced with a big job.

There was no "time out" to figure just how that job could be done. We just had to do it—and do it fast.

Today, everybody knows that farm and factory are meeting the challenge —that in spite of some mighty big handicaps, food and arms are being produced in vast quantities—to give our fighting men what they need to do their job.

We hear a lot of talk about this being a "modern miracle." But the real answer is just plain hard work, skill, determination and management know-how. That's what it takes—in a factory or on a farm.

In fact, we have a good deal the same kind of row to hoe—you who produce the food and raw materials, and we who make manufactured goods. Our work, our problems and the things that get us results are a whole lot alike.

Every farm owner is running a business, just as the man who runs a factory is . . . a business from which he expects a just reward if he runs it well.

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GENERAL MOTORS

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GMC TRUCK • FRIGIDAIRE

MANAGEMENT OF STAYMAN APPLES

(Continued from page 14)

Begin tillage one way in the middles about as early as the soil is fit to work. Do not let sprayer packed middles remain untilled. Maintain a dust mulch until as late as July 15 to 30, if the season is dry.

A good organic matter mulch spread along the rows of trees in one direction not only tends to keep the soil cool, but also tends to keep it moist. It helps absorption of water and prevents erosion. The ideal soil management treatment of a sandy soil where temperatures are high is a combination of tillage and mulch.

If you plan to use mulch and can get it, put it on during the winter. There is little or no time to do it once the spraying season opens. The snows and rains pack it down and it begins to keep the soil cool and moist from the start of the season.

Many orchard soils in New Jersey were formerly quite acid and deficient in calcium. Apple trees will not root deeply where the subsoil is acid and deficient in calcium and other nutrients. Apple trees will not utilize fertilizer efficiently where there is a deficiency of calcium. Delicious apples always have been small on the Penn loam type of soil at New Brunswick when the pH is 5.0 or lower.

If clover and fertile soil weeds do not grow well in your orchard, if the soil has not been limed in two or more years, if your soil has not been tested to determine its acidity and fertility, that should be considered at once. In brief, determine whether your soil has sufficient calcium and fertility and whether or not it is shallow-rooted.

An orchard upon a shallow or only medium deep acid soil is nearly always shallow-rooted. It does not respond too well to even heavy fertilizer applications. But, if it is limed, receives a complete fertilizer, and is properly cover-cropped, the amount of nitrogen required annually will be greatly reduced.

There is a marked difference in the appearance and growth of an orchard on acid soil and that of one which has received proper amounts of calcium and a complete fertilizer. If mulch is also employed, the improvement in response is still more marked.

It has actually been demonstrated at New Brunswick that the root system of an orchard can be deepened at least a foot in two or three years' time by getting enough calcium and nutrients into the subsoil. An extra foot in depth on the entire root system is a big advantage to a tree in dry weather.

Most Stayman orchards in New Jersey in recent years have been fairly well limed.

It should be decided whether or not the crop should be thinned. Apples two to two and a quarter inches sell slowly and at low prices when there is a big crop. They may sell fairly well when there is a short crop.

When Stayman apples fruit on spurs three to eight inches apart and some spurs bear two fruits, the trees are almost always biennial in bearing. If the tree growth is rather weak, it will appear that there are more apples than leaves. If the season is very dry, some of the fruits will sunburn.

Ernest Christ reported in the Horticultural News, November 1942, the thinning in 1941 of Stayman trees in such condition. The thinning was not done until August, yet it increased the number of two and three-quarter and three inch apples 60 per cent, and the improvement in the color was equally pronounced.

Another test by Mr. Christ in 1942 on trees which did not suffer from drought did not show much increase in size.

The Stayman does not respond to thinning like Grimes, for example; on trees with good vigor and enough moisture, thinning to six to eight inches and to only one apple per spur will tend to give you the best results in yield, and, probably, returns, that year. To obtain annual crops of Stayman on some soils the set of fruit cannot be much closer than 10 or 12 inches apart.

What makes small apples for the variety? The most basic factor is too many apples for the size of the tree and the number and vigor of the leaves. If such a condition exists as late as June, you cannot change the balance between fruit and size and number of leaves by the use of more fertilizer. The size of the spur leaves upon such varieties as Stayman and Delicious is often decided for the season by June.

Where water is the principal limiting factor in the size of the apples in any orchard, tillage, mulch and thinning are the cultural practices that count most. — *Reprinted by permission of HORTICULTURAL NEWS.*

Why the Petroleum Industry foresees full employment after the War

After Victory, returning veterans and former war workers will look to industry for jobs and security. The achievements of the Petroleum Industry give promise to their hopes:

1. New super-fuels, developed for fighting planes presage a new age of transportation, improved engines to drive automobiles, trucks, tractors with greater economy . . . and air travel for all . . .
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3. New petroleum-chemicals, unlocked for warfare by shuffling atoms and molecules, will in turn unlock a multitude of new materials for peacetime uses . . .

Men will be needed not only in the Petroleum Industry itself but also in other industries influenced by these developments: men to produce petroleum and its new products . . . men to sell and distribute them. Men to make and service oil burners, planes and motor cars . . . men to make the steel, glass, tires and all the other materials that will be needed.

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IN THE NEWS

H. L. DRAKE

Herbert L. Drake, of the Kansas State Horticultural Society, was born and raised on the extensive farm he now owns near Kansas City, Kansas. It is one of the largest and most diversified fruit farms in eastern Kansas.

H. L. DRAKE

Mr. Drake is an authority on varieties of fruits and he has originated several new varieties. His latest service to his community was in connection with the construction of the building and developing of the great new Food Terminal in Kansas City.

E. RIDDELL LAGE

E. Riddell Lage is one of the most prominent fruit growers in Oregon, having about 150 acres in fruit on a 234-acre farm at Hood River. He follows a program of orchard rotation in which he continually is pulling out old fruit trees and replacing them with young ones. Most trees are under 40 years old when they are pulled. In normal years his spray program takes a dormant, calyx, and four cover sprays to raise a clean crop of fruit.

E. RIDDELL LAGE

Mr. Lage believes in modern efficient equipment for the fruit grower. He has a stationary sprayer, and in his packing house is a tandem fruit washer and a rotary bin grader. Since his farm is fully equipped with modern tools, he does custom work for his neighbors which consists of tractor discing, plowing, baling, binding, and threshing and, also, fruit packing in the fall.

Twelve acres of his orchard is set to cherries with about one-third of Bings, another of Lamberts, and another third in Royal Annes. The Annes are usually sold to a canner and the black cherries to a local packer for the fresh fruit market.

He has 25 acres in pears, half Bartletts and half D'Anjous. The Bartletts go to a canner and the winter pears are packed on the ranch, later sold to a local shipper.

The balance of 113 acres consists of apples. The varieties planted are Red and Golden Delicious, Newtowns, Winesaps, and a few Spitzenbergs and Ortleys, and also a block of Gravensteins. Since Mr. Lage does not belong to a cooperative selling organization, he delivers this fruit to the shippers' cold storage, packed and ready for shipment. It is a big order for one man to handle, but Mr. Lage has had outstanding success.

He was President of the Oregon State Horticultural Society in 1942.

(Continued on page 37)

NATIONWIDE NEWS

(Continued from page 7)

els below those of a year earlier and 5 million bushels below the March 1, 5-year (1939-43) average, according to cold storage reports of the War Food Administration.

Frozen fruit holdings were reduced during February by 23 million pounds. The 186.8 million pounds on hand March 1 were 41.6 millions greater than that of a year earlier and 64.8 million above average.

The out-of-storage movement of fruits was below that for the same period a year ago, but was considerably heavier than average.

★

A PLAN designed to seal off one large source from which gasoline ration coupons have been drained into the black market will be put into effect throughout the nation on April 1, after a successful trial in Georgia and Florida during February, according to the Office of Price Administration.

The five-gallon "R" coupons, issued to farmers and other non-highway users, will be invalid at filling stations, unless the station has received permission from the OPA district director to accept "R" coupons on the ground that more than half of its business consists of bulk transfers.

Therefore, after April 1 only non-highway users who buy their gasoline at bulk plants or authorized filling stations, or who have it delivered into storage tanks on their own premises, will use the "R" coupons.

Farmers who buy most of their non-highway gasoline at filling stations will have to bring "R" coupons in to their local ration boards to be exchanged for "E"s.

★

THE need for large supplies of dried fruits to meet the requirements of the armed services, U. S. civilians, and allies, makes it imperative that a maximum production of raisins be obtained in 1944, the War Food Administration reports.

To accomplish this, it will be necessary that all raisin variety grapes produced in the eight California counties covered by Food Distribution Order 17, except those grapes used for canning, be dried or converted into rais-

(Continued on page 36)

SUPPLY OUTLOOK IS MOSTLY GOOD

THE supply outlook for spray and dust materials shows no radical changes in the past month, according to the Agricultural Insecticide and Fungicide Association. Movement to distributors, dealers and consumers continues satisfactory, in general, but still with important exceptions.

Such materials as nicotine and rotenone, whose demand fluctuates with the insect infestations, should be left at distribution centers ready for quick shipment to trouble spots, rather than tied up by too early buying.

The manpower shortage continues to be critical. This is particularly true with sulfur, which should be ordered early with open delivery date.

New War Production Board container orders have been issued, but packages still are a difficult problem.

Despite efforts by the War Food Administration and by the insecticide unit of the WPB, continuing uncertainty about lend-lease and other export requirements is causing some worry.

CALCIUM ARSENATE—production goals probably will be reached, despite continuing problems with manpower shortage and poor quality of crude arsenic.

COPPER FUNGICIDES—threatened with warehouse space shortage unless buyers take delivery of their sulfate needs. Copper oxide tight.

CRESOLS AND CRESYLIC ACID—adequate.

CRYOLITE—adequate for extensive use, alone and in sulfur mixtures.

DINITRO COMPOUNDS—adequate.

LEAD ARSENATE—outlook adequate as of this date. Same problems as with calcium arsenate.

FORMALDEHYDES—adequate.

NICOTINE—adequate for normal requirements. Outlook good if export requirements are reasonable.

OILS, SOLUBLE AND SPRAY—adequate.

PARADICHLOROBENZENE—tight, probably adequate.

PARIS GREEN—outlook uncertain pending export requirement and insect infestation.

SULFUR—ample unless hampered by manpower and transportation bottlenecks.

WETTABLE SPREADERS AND STICKERS—tight.

ZINC COMPOUNDS—adequate.

"HANDLE WITH CARE"

HERE are suggestions for the care of sprays and dusts:

Keep dust tightly closed, away from moisture. Keep pastes damp, adding a little water if necessary.

If you have any rotenone or pyrethrum preparations, keep them out of the light; they keep better in darkness.

Some containers may be of poor quality. If any paper bag or cardboard carton threatens to leak, slip another bag over it and carefully label the outside cover.

CONTROL OF RED MITE

(Continued from page 20)

the mite until late August or September. However, after that time the mite usually increases rapidly and many overwintering eggs are laid, which necessitates the use of the dormant oil the following spring. In seasons favorable to the red mite, despite the early-season effect of the oil, the population increase may occur as early as late July or August. Under such conditions, serious damage may occur unless summer controls are used. Available materials for summer use against red mite are (1) summer oil, and (2) summer dinitro.

Frequently, summer oils have been used in the past and in many instances the results have been rather variable. If they are employed, the strength of the oil should never be less than one per cent. Frequently, 1½ per cent is better. The spray must be thoroughly applied, particularly to the lower surface of the foliage.

The summer dinitros are a more recent development, but extensive tests have proved their effectiveness against red mite. They should be used according to the manufacturer's directions and the application should be thorough. In general they are to be considered as more reliable than summer oil.

Regardless of which summer spray is used, it should be applied as soon as damage is noticed. Growers should keep watch in all sections of their orchards and, if general evidence of mite attack is seen, it is best to spray at once. Spraying when or after the injury has reached a peak is simply lost effort (and cash).

A possible future development in red mite control may involve the discontinuance of the dormant oil and the placing of more responsibility on the summer sprays. Preliminary trials have been promising.

The results of a 5-year experimental program against the European red mite on apple show that summer spray schedules using different sulfur compounds have almost identical effects on mite populations. Sulfur compounds in summer applications aid the red mite by their toxicity to predaceous mites, which are the chief agents in natural control. When used in summer schedules, the new fungicide produced the same result as sulfur; namely, increased populations of red mite. Dormant oil is still a standard control. Summer populations of red mite may be greatly reduced by applications during the growing season of summer oil or of summer dinitro. Of these two materials, the dinitro seems more efficient.

LABOR-SAVING PEACH THINNING

(Continued from page 11)

practice developed for use in this emergency only, but in this area it is adapted to normal times as well.

Brush thinning can be started as soon as the buds become bulbous or pink and are readily brushed off. It can be continued until the leaf points reach a stage of development where they will be damaged excessively. Blossoms can be brushed off most readily at full bloom, but thinning is usually begun about a week before full bloom, and it sometimes is continued for several days after full bloom. This gives a week or 10 days for effective thinning of a single variety.

Various types of brushes are used. The dogwood brush brooms are of different sizes and are made by tying together several saplings 3 to 5 feet long. The larger brooms thin more rapidly, but do not do as good a job of spacing blossoms on the branches as do the smaller brushes. Therefore an additional "spot thinning" of blossoms with smaller brushes is often done later. A fair average with the dogwood broom is 150 to 200 trees per day per worker. When dogwood is not available, a bundle of 15 peach twigs of last year's growth, 30 to 36 inches long, makes an effective brush. These brushes soon wear out, and each worker uses five or six of them per day. To furnish a more durable brush, the author designed the wire thinning brush, made of spring steel wire. It does a detailed job of spacing blossoms, as in hand thinning, but is much faster. At present its chief disadvantage is the lack of a really durable wire for the high carbon wire now available tends to break after several days of hard use. In hand thinning of blossoms a worker will average 20 to 30 trees per day. With a wire brush 60 to 75 trees per day is a fair average, which is from half to a third as many as with the larger dogwood broom.

Blossom thinning is beneficial, particularly to early-ripening varieties, but it may be used to advantage on any variety growing where danger of blossom injury from cold is slight. The risk of loss from frost could be reduced by doing only a partial thinning in the bloom, to be followed by a later hand spacing of fruits. Where practicable, this double thinning would mean a considerable saving in labor. It should be remembered in blossom thinning that usually only about half of the blossoms develop into fruits, so that at least twice as many blossoms should be left on the trees as the number of peaches desired. Where a grower with a large acreage is faced with a practical impossibility of thinning his crop later in the season, and the alternative is no thinning, blossom thinning is well worth the risks involved.

Peach thinning may also be accomplished rapidly later in the season by the use of a 1-pound rubber mallet. At about the pit-hardening stage or later, the smaller branches are jarred with the mallet. This effectively shakes off the excess peaches. Then the mallet is reversed in the hand, and the handle of the mallet used to break up clusters and knock off deformed peaches. This method does not do as good a job of thinning as hand spacing of fruits, but it may do an acceptable job in only a fraction of the usual time. It has been put to practical use by Mr. W. J. Wilson of Fort Valley.

Another time-saving peach-thinning method is described by Mr. F. A. Gilbert in the May 1942 issue of the New Jersey State Horticultural Society News. A stick of wood about the size of a broom handle, to which a piece of rubber garden hose three to four inches long is attached, is used to knock off the peaches when they are an inch or more in length. The piece of hose may extend an inch below the stick which may be cut so that a pointed lip is formed which will scrape off the fruit if it is not practical to knock it off. In timed trials, thinning with this stick required approximately one-quarter the time required for hand thinning. Two sizes of stick were advantageous, one 18 inches long and one 40 inches long, used alternately. In the hands of a careful worker there was no damage to remaining fruits. Striking the fruits that are to be left should be avoided.

These devices for thinning peach blossoms and fruits have been put to the practical test by peach growers, and have accomplished acceptable thinning jobs. It is recognized that these methods are not as good as hand thinning, but, as a means of saving labor under present conditions, they are particularly worthy of consideration now.

GOLDEN CONVENTION

THE Fiftieth Annual Convention of the International Apple Association will be held August 8-10 at the Hotel Sherman, Chicago, Illinois.

The International Apple Association was organized February 7, 1895, in the Hotel Sherman and its first Convention was held there in August, 1895.

Stake YOUR Claim NOW with War Bonds

It took a lot of grit for a man and wife to stow their children into a prairie schooner with a few bare necessities and fight it out with all the hardships the frontier had to offer. Yet, these self-reliant pioneers proved their ability to win the finest reward a family can have—security in a land of growing opportunities.

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HOUSE'S CHERRY CIDER CONCENTRATE — YOU add only sugar and water, no trouble. Enough for 5 gallons. True fruit flavors—Cherry, Grape, Black Raspberry, Blackberry, Loganberry, Strawberry. Send $1.00 for all five flavors. Post-paid. Satisfaction guaranteed. Children cry for it.—"It's the best drink I ever had." Special offer to Roadside Stands. EDWIN H. HOUSE, Saugatuck, Michigan.

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"HOW TO BREAK AND TRAIN HORSES"—A BOOK every farmer and horseman should have. It is Free; no obligation. Simply address BEERY SCHOOL OF HORSEMANSHIP, Dept. 1384, Pleasant Hill, Ohio.

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IMPROVED BLUEBERRIES—LARGE AS GRAPES. Delicious government hybrids, 2-year plants 60 cents each, $7.00 doz. 3-year bearing age $1.00 each, $10.00 doz. GEO. C. MORSE, Williamson, New York.

STRAWBERRY PLANTS—CERTIFIED, HARDY, SElected for yield, Dunlap 200—$2.00. Giant Gem Everbearing—100—$2.00. Postage Paid Free. RIDER NURSERY, FARMINGTON, IOWA.

FOR SALE—ROOT STOCKS, GRAFTS, BLIGHT RESisting chestnut trees, fruit trees, small fruits, etc. VIRGINIA TREE FARMS, Woodlawn, Virginia.

ORCHARD FOR SALE OR LEASE

A 22-YEAR OLD APPLE ORCHARD OF 10 COMmercial varieties located in northeastern Ohio within trucking distance of all the important consuming centers of this area. Property consists of 145 acres in one tract complete with residence, sales and storage buildings. An unusual opportunity that presents itself only because of the decease of some of the principals. BOX 35, AMERICAN FRUIT GROWER, 1370 Ontario Street, Cleveland, 13, Ohio.

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VICTORY GARDENERS MAKE EARLIER LARGER yields. Use our field-grown vegetable plants. Beet, Broccoli, Cabbage, Cauliflower, Lettuce, Onions, Pepper, Potato, and Tomato Plants. Catalog Free. OMEGA PLANT FARMS, Omega, Georgia.

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CHIN-CHIN GIANT CHINCHILLAS. KING OF RABbits. Most beautiful fur. Small investment. Large profit. Free illustrated booklet. WILLOW BROOK FARM, R.D. 32, Sellersville, Pa.

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RUBBER STAMPS, INKS, PADS. FAST EFFICIENT service. Quantity discount rates. STAMPIT COMPANY, 189 Jefferson, Memphis, Tennessee.

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WANTED ORIGINAL SONG POEMS! FIVE STAR MUSIC MASTERS, 716 Beacon Building, Boston, Mass.

TREE BANDS

EARLY BIRD TREE BANDS CHEMICALLY TREATED. Low in Price, high in quality. Send orders early. EDWIN H. HOUSE, Saugatuck, Michigan.

ORDER SURE-KILL BETA-NAPTHOL TREE BANDS now to insure delivery. M. A. KOELLER, Barry, Ill.

WANTED

WANTED REVOLVING BRUSH TYPE APPLE POLisher in good condition. Must be cheap. HAAS BROTHERS, Route 1, South Milwaukee, Wisconsin.

WANTED DOUBLE TUBE TYPE MEDIUM OR LARGE cider or vinegar pasteurizer or generator. Good condition. Must be cheap. HAAS BROTHERS, Route 1, South Milwaukee, Wisconsin.

WANTED—ORCHARD DISC-HARROW AND SUBsoil breaker. D. R. HOFSTETLER, 600 Brood Avenue, Canton, Ohio.

NATIONWIDE NEWS

(Continued from page 31)

ins. The eight counties covered by the order are Kern, Kings, Tulare, Fresno, Merced, Madera, Stanislaus, and San Joaquin.

★

ESTABLISHMENT of uniform producers' dollars-and-cents ceiling prices for all wooden agricultural containers produced east of the Rocky Mountains was announced by the Office of Price Administration. The new prices became effective March 18, 1944. As a whole the new ceilings average 10 per cent higher than previous maximum prices, reflecting increases in production costs experienced since February, 1943, when the previous ceilings were issued. The higher prices are expected to permit a more even production of containers which should result in a better distribution of seasonal fresh fruits and avert loss and spoilage on the farm.

★

DISTURBED by the pending review of agricultural deferment cases and by the fact that one regular man to each 32 acres of orchards is the governing rule to Selective Service Boards in judging requests of fruit growers on non-irrigated orchards for deferments, the National Apple Institute and the National Peach Council held a joint meeting on March 8 among officers of the Office of Labor, War Food Administ-

(Continued on page 38)

Returns on Gripsholm

SECOND Lieut. Robert H. Young, 23, son of Dr. H. C. Young, Chief of the Botany and Plant Pathology at the Ohio State Experiment Station, Wooster, was one of those who returned from internment in Germany aboard the liner Gripsholm on March 15.

A photograph reconnoissance officer he was shot down while flying over Tunis, Jan. 31, 1943, and was taken to a camp in south Poland where he received treatment for a shot through the right elbow and another in the right collar bone.

Robert Young left Ohio State University to join the air force before Pearl Harbor.

IN THE NEWS

(Continued from page 30)

C. J. Telfer

C. J. Telfer is President of the newly organized Wisconsin Apple Institute. He was born in 1885 on a dairy farm at Fort Atkinson, Jefferson County, Wisconsin. He attended the University of Wisconsin and Cornell University, Ithaca, New York.

C. J. TELFER

For 13 years Mr. Telfer was with widely known nurseries and in 1919 he became associated with the Larson Company, Green Bay. He has been with that Company ever since.

Because of his experience and acknowledged capabilities, Mr. Telfer has the distinction of being the first President of the Wisconsin Apple Institute which has been organized to carry on a program for promoting the interest and use of Wisconsin apples, and to take care of problems which confront Wisconsin fruit growers. It is affiliated with The National Apple Institute and The Wisconsin Horticultural Society.

Other officers are: Wm. F. Connell, Menomonie, Vice President; Arnold F. Nieman, Cedarburg, Sec'y-Treasurer; H. J. Rahmlow, Corresponding Secretary.

TIPS ON PRUNING

(Continued from page 10)

and succulent, preferably in June.

The Pruning Operation

1. Leave no stubs! Cut close to a main branch or strong lateral.
2. When removing large branches, make a cut on the under side first to avoid stripping bark from a main branch or the trunk.
3. Avoid damaging or breaking branches by careless climbing.
4. Keep pruning tools sharp to save time and labor.
5. Return tools to their proper place each night so they can be located easily when needed again.

Brush Should Be Removed Speedily and Economically

1. Use brush pusher (back rake) in large orchards.
2. A convenient drag can be made from a 25 to 30-foot length of heavy woven wire fencing with a cross bar at each end and two spreaders located 8 to 10 feet in from each end. The brush may be unloaded by rehitching to a rope passed over the load from the rear of the drag.
3. If brush burners are used in the orchard, care must be exercised to avoid heat injury to the trees.

STRAWBERRY DISEASES

(Continued from page 22)

rains occur during harvesting.

Spraying has not been found practicable for the control of berry rots because of the objectionable residue they leave on the ripe fruit. Mulching is the only practical method of reducing losses from fruit rots. In Louisiana, and some other parts of the South, pine needles are used as mulch. Pine needles are tough and clean and make an excellent, quick-drying, well-ventilated mulch. Straw and hay also make good mulch.

FRUITS OF THE EARTH. *By Jannette May Lucas, Illustrated by Helene Carter.* 1942. J. B. Lippincott, Philadelphia, New York, London. $2.00

NATIONWIDE NEWS

(Continued from page 36)

tration; Rural Industries Division, War Manpower Commission; Selective Service System; and representative growers from non-irrigated orchard sections.

Growers presented evidence that one acre of orchard was correct for one war unit, which on the basis of 16 war units per man, allows for one regular man for 16 acres of orchard, but that the present rule for the guidance of Selective Service Boards of two acres per war unit, or one man per 32 acres, was out of line with practical operation.

Mr. W. C. Holley, Assistant Chief, Programs Branch, Office of Labor, WFA, said he now is preparing to make recommendations to the Selective Service System and would include an item relative to orchard labor. He did not state exactly what that recommendation would be.

In general, the point most stressed was the need for working closely with the local and State Selective Service boards so that they would understand the needs of orchardists.

It was pointed out that some local Selective Service boards were requiring the listing of temporary help, such as men employed for picking or thinning, in determining the deferment of permanent employees. This practice, if allowed to continue, will deprive growers of their year-round key men and will, thereby, make it impossible for them to continue in full operation.

★

APPLE containers, both wooden and fibre, are included in a new priority classification for food containers, AA2X. This places apple containers in a relatively higher priority position than they formerly held in AA3.

★

HOSPITAL patients will receive a supply of dried apricots through release of part of the 1943 pack to civilian hospitals. But no dried apricots will be available for general civilian consumption because of the exceptionally small dried apricot pack last year.

Hospitals will be eligible to obtain apricot allotments on the basis of the average number of patients who were served daily in 1942.

★

THE 1944 Annual Meeting of the National Apple Institute will be held June 16-17 at the Hotel Washington, Washington, D. C. It promises to be a thoroughly enterprising and interesting event.

★

THE leading crop in point of value, grown in California in 1943 was grapes, representing $159,557,000. Second crop was oranges, representing $123,850,000. This is in accordance with reports from the Los Angeles Chamber of Commerce.

★

THE War Food Administration recently announced that packers have been authorized to release over 3½ million pounds of dried apples and nearly a million pounds of (Zante) currants for sale to civilians through regular trade channels. Release of both was made possible by a change in war requirements for these fruits.

The 3,568,000 pounds of dried apples represent the first sizeable quantity of this fruit, available to civilians in nearly two years. Before the war U. S. civilians consumed about 20 million pounds of dried apples a year.

★

ACCORDING to the Office of War Information, more women will be needed for emergency farm and orchard labor this year. Last year 250,000 women were placed for farm work under the Government farm labor program, including those who worked more than a month as members of the Women's Land Army, and 350,000 others made their own arrangements for working on the Nation's farms and orchards. This year's recruitment needs have been set by the War Food Administration at 400,000 for the Women's Land Army and 400,000 for those who make their own arrangements.

★

ACCORDING to "Marketing Activities," issued by the War Food Administration, the citrus crop is a record one. While no difficulty is expected in marketing this fruit, Government men are keeping a wary eye on the movement to prevent a market glut.

★

THE Annual Meeting of the Cooperative Fruit & Vegetable Association will be held April 21, at the Hotel New Yorker, New York City. All members are urged to attend.

★

THE War Food Administration has notified canners to increase from 32 to 38 per cent the quantity of canned grapefruit juice which they are required to set aside for Government war purposes. This action raises the Government's grapefruit juice reserves from the 1943-44 pack from about 7,400,000 cases to approximately 9,500,000, cases (basis, 24 No. 2 cans). The entire increase will go to the armed forces.

• HARLOW ROCKHILL •

(Continued from page 19)

than the peach, lack desirable quality, but here is a collection of hardy hybrids which may prove to have great value in the future breeding program of the peach.

During the past 30 years, Rockhill was greatly interested in working with the plum. Included in his collection were a number of hardy species and hybrids. He made many inter-species crosses and succeeded in producing many hybrids in which from three to six species were intermingled. Among these plum seedlings are several which have size and quality, and, above all, the fruit is excellent for culinary use, a characteristic found in very few of the plum hybrids commonly grown in the middlewest.

For many years, Mr. Rockhill was an active cooperator with the United States Department of Agriculture and the Iowa Agricultural Experiment Station. He had a most enthusiastic interest in testing any new and promising variety, whether it be for the general farm or for the orchard.

Those who knew Harlow Rockhill will always remember him for his great enthusiasms and his unbounded faith in the possibility of producing new and more useful fruits, flowers and crops by the method of plant breeding. He enjoyed a wide acquaintance among scientists, entertained many of them at his farm, and was always very generous in showing his friends and visitors the products of his creative mind which grew in such profusion around the house and in the experimental plots.
—H. L. Lanz.

RUIN

FROM THE CLOUDS

The Hail Demon—lurking in those black clouds that come tumbling above your orchard—may in a few minutes destroy all your prospects for a successful season.

His attack is sudden and furious. You are utterly helpless.

No section is immune, and the fact that there has not been a bad hailstorm in your community recently is no assurance of your safety.

Of course you cannot *prevent* hail, but you can protect *from* hail the money and effort you have put into your growing fruit crop.

Is it worth while taking a chance when the cost of such protection is so small?

Take advantage of the opportunity before it is too late, and . . .

Protect your work and your investment with

HAIL INSURANCE . . .

Insure your crop in a sound capital stock insurance company whose risks are so widely distributed that local losses cannot hurt them as they do the owners whose crops are ruined.

This type of insurance gives you absolute protection. There are no assessments. There is no pro-rating of losses. Losses are paid promptly, and fair treatment is assured.

Hailstorms destroy crops each year valued at more than 100 million dollars. It may be *your* turn this year. You cannot afford to take the risk alone.

REMEMBER . . . the Hail Demon Strikes with Fury!

The Capital Stock companies listed below have paid more than 20 million dollars for losses on growing crops.

★ THE ÆTNA FIRE GROUP ★ NORTH AMERICA COMPANIES

★ THE SPRINGFIELD GROUP OF FIRE INSURANCE COMPANIES

For name of our nearest local agent write to one of the above named companies, care of

HAIL DEPARTMENT 209 W. JACKSON BLVD., ROOM 909-A, CHICAGO 6, ILL.

Fruit growers can't afford to relax. Their job is never done. To produce a profitable fruit crop, work and watchfulness must be the order for April days. Throughout all fruit growing areas, you'll find an active program of spraying and dusting under way, with Dow insecticides and fungicides. There is good reason for the favor shown Dow products. They are dependable, extremely effective, economical to use. Growers are after results and that is why they find it pays them to rely on Dow materials. For confirmation and any information desired, consult your dealer or state experiment station.

TIMELY PRODUCT TOPICS

Fungous Diseases—"Mike" Sulfur is a natural to combat apple scab, leaf spot, brown rot and similar troubles. Growers have long considered it their best bet to protect apple, peach, cherry and plum trees from these fungous diseases. "Mike" Sulfur gives more thorough coverage than was ever before possible. This wettable sulfur contains more than 95% active sulfur of microscopic particle size. You get a fog-like spray that blankets the foliage.

"Mike's" Buddy—Dry Lime Sulfur is made from a concentrated lime sulfur solution by a special process of evaporation. It is a strong check on fungous diseases, and tough on red spiders and rust mite.

Copper Fungicide—Bordow is a Dow product of special interest to cherry growers. You can't beat it as a control for leaf spot (shot hole fungus). Bordow is a copper fungicide that kills spores on contact.

Red Mites—*DN*-111 is the Dow specialty that puts this pest out of business. *DN*-111 stops that red-mite summer build-up. It can be combined with "Mike" Sulfur and lead arsenate, or can be used alone.

***DN*-Dust D-4** is the proper summer control for red mites if you'd rather dust than spray. Like *DN*-111, it has a real knock-out punch.

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TO INDUSTRY AND VICTORY